MAN

A MONTHLY RECORD OF ANTHROPOLOGICAL SCIENCE.

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Plate C, *for* TOBICA *read* TOLUCA.
No. **20**, page 40, line 37, *for* 12 Ahau 8 Cui *read* 13 Ahau 8 Kankin.
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A WOODEN STOOL FROM THE ISLAND OF ELEUTHERA.

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ORIGINAL ARTICLES.
With Plate A.

West Indies: Archæology. Joyce.

Note on a Wooden Stool from the Island of Eleuthera, Bahamas. 1

By T. A. Joyce, M.A.

The accompanying plate gives two views of an interesting wooden stool recently acquired by the British Museum. It is cut from solid hard brown wood, and the extreme measurements are, length, 13·7 inches, breadth, 7·5 inches; the seat, which is quadrilateral in outline, with rounded corners, has a marked antero-posterior curve, and is supported on four short legs, oval in section, and disposed symmetrically. From one of the shorter sides of the seat projects a knob, which has been carved to represent a grotesque human head, of which the eyes and mouth have evidently at some time been emphasized by inlay, probably of shell (see Fig.). The style of the carving is unmistakably West Indian, and it is obvious that the stool is the work of some branch of the earlier of the two native stocks, the so-called *Taínan*, who were found in occupation of the islands at the time of the Discovery. The particular island to which the specimen belongs is indicated by an inscription, carved on the underside of the seat, which runs as follows:—

CARVING OF GROTESQUE HUMAN HEAD.

"This stool Was found in a Cave in the Island of Eleuthera, Bahamas, about the year 1820 by James Thompson, a Slave, and purchased of him by Thos. Pugh Wes. Missy. in 1835. It is supposed to be either a piece of the domestic furniture of the Indians or one of their Gods. It is at least 300 years old. 1850."

At the time of the Discovery, the West Indies were peopled by two native stocks, (*a*) the Taïnan, a people of Arawak affinities, who were in possession of the Greater Antilles and the Bahamas, and (*b*) the Carib, who had spread from the southern continent, occupying gradually the Lesser Antilles, and had even gained a footing on the eastern end of Porto Rico.

Objects of wood from the West Indies are by no means common, and specimens from the Bahamas are exceedingly rare.

The wooden stools, called *Duho*, used by the Taïnan aborigines, were of some ceremonial importance in so far as the more elaborately carved specimens constituted one of the distinguishing marks of important men. Honoured guests were provided with an ornamental seat of this kind, and a similar compliment was paid the leaders of a party sent by Columbus to visit a Cuban chief. The *Duho* are described in the passage recounting the expedition as "seats made of one piece, in strange shapes, "almost like some creature that had short legs, and the tail lifted up to lean against, "which is as broad as the seat for the convenience of the leaning, with a head "before, and the eyes and ears of gold." Stools answering to the above description (and similar in fact to the specimen under discussion if the posterior portion of the seat had been prolonged somewhat in an upward curve) are figured by Fewkes in his monograph on Porto Rico,* from which I quote the following passage: "*Duhos*, "or seats made of stone and wood, were common in the houses of the Caciques. "These objects, consisting of seats supported on four short stumpy legs, generally "represented animals, and a head was carved at the upper or lower end. The "forelegs often had depressions in the shoulders in which may have been inserted "stones, shells, or nuggets of gold. The upper surface of the seat, especially the "back, was sometimes decorated with designs . . . consisting of spirals, circles, "triangles, or parallel lines. These stools were probably used both secularly and "ceremonially, serving at times as seats of honour in the houses of the Caciques, "who themselves occupied *Duhos* on state occasions. The dead were often placed "on similar seats. . . . The great care given to the decoration of stools shows "how high they were esteemed."

The British Museum already possesses a number of wooden objects of Taïnan workmanship of very great importance, including a stool from Cuba of very unusual type. These I published some years ago in the *Journal* of the Royal Anthropological Institute, Vol. XXXVII, p. 402. The new specimen is an interesting and highly important addition to the collection, particularly in view of the extreme rarity of objects from the Bahamas.

T. A. JOYCE.

Linguistics. Gardiner.

Some Thoughts on the Subject of Language. *By Alan H. Gardiner.* 2

The following paragraphs are extracted, with certain modifications, from a letter addressed to Dr. B. Malinowski in New Guinea. Our correspondence on scientific topics had led to some discussion of linguistic questions, and had suggested the necessity of treating them by methods different from those employed in the ordinary handbooks on Language. Meanwhile, my own researches in Egyptian grammar had brought me to grips with the fundamental and perplexing problems of "subject," "predicate," word-order, tense, and the like; it is a regrettable fact that Egyptologists have but the haziest notion as to what the term "predicate" means, or ought to be made to mean, and some excursions into Semitic and Indo-Germanic philology suggest that the students in those fields are in no better case. Desultory meditation

* "Aborigines of Porto Rico," by J. W. Fewkes, 25th *Annual Report of the Bureau of American Ethnology*, 1903-4.

on this and kindred problems resulted in the remarks here set down. I should not have dreamt of printing them in their present incomplete and admittedly one-sided form but for the exhortations of an honoured friend by whose counsels I set the utmost store, and who considered that they might prove stimulating to some one among those who, in this new beginning of things, are casting about for a promising object of study :—

"I must try to express to you my views about a fallacy which I believe to be latent in the outlook of most philologists, namely, that Language is *nothing more* than a sort of externalised replica of Thought; so that if one could 'analyse' the meaning of all words and 'discover' their 'true' import, one would have a sufficient account of the mind of man. Hermann Paul talks of the psychological analysis of a sentence,* and employs the term 'psychological predicate.' Max Müller said, in effect, that Language and Thought are identical. These standpoints seem to me most dangerous, and to ignore and overlook the essential character and purpose of Language, which is to serve as a means of communication between man and man.† Words are intrinsically but meaningless symbols or tokens; to disregard the fact that they are mere instruments, and to treat them as the actual mind of man, susceptible of 'psychological analysis,' is absurd. I will endeavour to develop this theme a little further. As a provisional definition of Language (in the abstract sense of the word) I submit the following: '*Language is the attempt to influence the mind of a listener by means of articulate audible sounds having an accepted symbolic reference to the facts of experience.*' (In this definition I ignore the consequences arising from the fact that a speaker plays a double rôle, that he hears his own words as well as those of others, and that Thought in its most clarified form practically involves a mute conversation with oneself.)

"Now all the variety and complexity of language derives from the fact that the mentalities of speaker and listener at the moments of speech are different. It is this difference that makes language necessary as a means of co-operation.

"If X and Y perceived a common object A at one and the same instant, and reacted towards it for the common welfare in an identical manner, language would not be needful and would not have evolved. When the difference of attitude for two individuals with regard to a specific object-in-view is comparable only with the difference between a thing observed and its reflection in a mirror (what is seen by X as dextral appearing to Y as sinistral), words are equally little needed: my parlour-maid brings in the potatoes unbidden, our common purpose being that I should eat them. The necessity for language arises only there where mutual articulation is indispensable. This seems to hold good pretty generally: even the

* "So ist auch psychologischer Analyse in dem Satze *Mario hat Zahnschmerzen* . . ." Hermann Paul, *Principien der Sprachgeschichte*, 4th ed., p. 284.

† The only admission that I have found of this very patent and obvious truth is in Dr. Ward's recent very important work, entitled *Psychological Principles*, p. 286, footnote 1, and even there no reference is made to the fact that *as soon as* articulate utterance became purposive, *i.e.*, became language proper, it was used at least as much to sway the actions of others as to derive benefits from their thoughts. The fact that the proper purpose of Language is communication is consciously ignored, *e.g.*, in Tylor's definition of Language as "the expression of ideas by means "of articulate sounds habitually allotted to those ideas," a definition quoted with approval by T. G. Tucker, *Introduction to the Natural History of Language*, p. 3. Dr. Marett, again (*Anthropology*, p. 122), seems to conceive of Language as a necessary concomitant of thought—*cogito, ergo dico*—as the following quotation shows: "When he defied the ice-age by the use of fire, when he "outfaced and outlived the mammoth and the cave bear, he was already the rational animal, "*homo sapiens*. In his way he thought, even in those far-off days. And therefore we may assume, "until direct evidence is forthcoming to the contrary, that he likewise had language of an articulate "kind. He tried to make a speech, we may almost say, as soon as he had learned to stand on "his hind-legs."

writer of novels aims at putting his readers into his own frame of mind with regard to the matter, emotional or presentational, of his discourse; even the diary-writer conceives of the future self for whom he writes as of a being who will to some degree have lost touch with his present, experient self. Conversation is a series of movements by which one mind seeks to make progress in co-operation with another by alternately imposing its own standpoint with regard to the matter in hand, and modifying it in the light of the standpoint it has created in the mind of the interlocutor; conversation ceases when the originally somewhat differently attuned minds find themselves, as regards the topic discussed, in harmony with one another, or when such harmony is recognised as unattainable.

"The actual point upon which X wishes to influence the mind of Y is what is called the 'predicate'* (the 'psychological predicate' of von der Gabelentz). This is the only absolutely essential element in language, corresponding to an event or modification (whether due to outer or to inner stimulus, whether arising from changes in the physical or in the psychical environment) in the mind of the speaker, which causes him to desire a corresponding but reversed (*your* sinistral to *my* dextral) psychical change in the listener. In the beginning, no doubt, it was only predicates that were expressed; articulate symbols of abstracted ideas expressive primarily of a relation of things interesting from the point of view of the speaker's immediate welfare (*e.g.*, 'sweet' as applied to a fruit), but secondarily referring, in use, to an unexpressed subject somewhere in the background of which the relation in question was predicated. The term 'predicate' is here, of course, employed in a very wide sense; a German child of very tender years was heard to say 'Heim, Mimi' ('Mimi' = 'Milch'), meaning thereby 'I want to go *home*, I want some *milk*.'

"On this view the subject is a secondarily developed element serving merely to orientate the listener with regard to the predicate, and changes with the listener in proportion to his nearness, in the psychical sense, to the phenomenon spoken about. If I observe a fire break out in the house opposite, I say nothing, but run to help if that seems to me the proper course. If I require co-operation, however, my immediate articulate reaction is the word 'Fire' (a real predicate), which to anyone close at hand and with his wits about him will mean, and is intended to mean, 'That house is on fire.'† To a blind man I might say 'The house opposite is on fire,' and to the policeman round the corner, 'No. 7, Duke Street, is on fire.' But to my grandchildren (if I think it worth while to recount to them the incident), I shall say, 'I chanced to be looking out of the window of the house where I was 'living at that time, namely, No. 6, Duke Street, and to my horror I saw that the 'house opposite, No. 7, was on fire.' In all these cases the speaker is the same, the thing spoken about is the same, even the emotion to be excited is, approximately, the same. And yet the expression differs widely in each case. The absurdity of leaving out the listener is obvious, and becomes more so when we reflect that in language generally it is the relation of the listener to the speaker at the moment of speech which gives the differentiating form to the sentence employed: when I desire an answer I ask a question; when I demand an action by way of reply, I use an imperative; when I deny, I assume my interlocutor to have affirmed; when I voice a wish I appeal for sympathy.

"Assuming that you agree with all this, it will probably seem to you that the standpoint here adopted is very commonplace: yet I can assure you that, so far as my reading goes, it has eluded almost all who have written upon the subject of Language. Language is usually regarded as somehow a translation of the inner life,

* I am not here dealing with the grammatical predicate, which is simply that part of a sentence which contains the verb or copula.

† It may, of course, mean a good deal more as well, *e.g.*, "You must help to put the fire out."

two things being completely lost sight of: (1) That the inner life is an unceasing adaptation to environment, and (2) that in so far as this adaptation can take place without recourse to others, language does not occur.* Language, as I wish to see it studied, is a sociological factor inseparable both from the environment which gives its impulse, and from the listener who demonstrates, by action or by verbal response its practical utility; it is a mechanism for the communication of thought, not a duplicate, or kind of soul of it.

"I omit all reference to the fact that Language is a most potent factor in actual thinking, that, indeed, there has been a constant action and reaction between Language and Thought, which renders the question of priority between them nugatory.

"You will find that Hermann Paul gives the most ridiculous definitions of subject and predicate; and yet his undeniably important and stimulating book on the Principles of Language is widely regarded as the standard work on the subject. For Paul 'the psychological subject is that presentational complex which is first existent in the mind of the speaker or thinker, and to which a second presentational complex, the psychological predicate, appends itself.'† Just as if one necessarily thought in the order, 'The lion—roars!'

"No attention seems to be given by writers to another essential difference between Language and Thought. I refer to the fact that, since we cannot talk in chords—combinations of different sounds produced simultaneously—Language must, so far as it is not monosyllabic (as in *exit*, 'please!'), be *extended in time*. A sound strikes upon my ears, and if I attend to it at all it is because I am interested in it from a particular point of view, as may be illustrated diagrammatically by either

(*a*) 

or (*b*) 

"The point on which the psychological interest is focussed is thus given simultaneously (or may be given simultaneously, for other cases are easily imagined) with the point left, if I may so say, in shadow. If now I wish for any reason to call the notice of anyone else to the same phenomenon, and if his attention be so distracted and detached that I must bring the whole presentation before him, I am unable to do this by any single monosyllabic articulation. Many modes of expression are open to me, a fact that again shows that Language does something more than merely to translate a particular thought. I may say 'The lion roars' with level intonation, leaving it to the hearer to decide whether I wish him to understand (*a*) or (*b*). Or, if I am poetically inclined, I may say 'Roars the lion' with even accent. Again, I may stress the predicate (*a*) '*The lion* roars,' (*b*) 'The lion *roars*,' there being in the former case a discrepancy between real and grammatical predicate. Or again, I may keep real predicate in harmony with grammatical

* I am speaking of language as we have it to-day. How far it is true that language (*i.e.*, intentional, purposive utterance) has evolved out of an unbroken stream of emotional gestures and articulations uttered without reference to a listener need not here be discussed. Dr. Ward (*op. cit.*, p. 292) quotes with approval Volkmann's statement: "Von Natur ist der Mensch eine Resonanz, die ununterbrochen die erhaltenen Eindrücke wiedertönt; schweigen lernt er erst allmälig."

† *Op. cit.*, p. 124: "Das psychologische Subject ist die zuerst in dem Bewusstsein des Sprechenden vorhandene Vorstellungsmasse, an die sich eine zweite, das psychologische Prädikat anschliesst." The term "psychological predicate" was coined in order to meet the various modes of emphasising the different words in such a sentence as "Charles walks to London every morning"; by laying stress on the particular words, the thing to be expressed may be Charles not James, walks not runs, and so forth. The term "psychological" is, however, illegitimate, as the subject-matter of psychology is mind, or if this rough and ready definition be objected to, at all events not language; "real" or "semantic" predicate would be better.

predicate by a paraphrase: (*a*) 'It is the lion that is roaring,' (*b*) 'What the lion ' is doing is to roar.' Suppose the listener to be in close sympathy with the speaker, the words 'The lion,' or 'He roars,' will often suffice. In presence of the beast itself an interchange of glances between the hunters will be enough, or indeed even less than this.

"It seems clear, then, that speech is a much more complicated thing than mere thought. Besides the content of the statement, command, question, wish, negation, maxim, epigram, or curse that is expressed, there is always involved an unexpressed relation to a listener, which, by a curious paradox, is in practice the decisive factor in determining what words are actually used and the order in which they are arranged.* Nor must it be forgotten that Language is used for concealing or distorting thought (as in lying and boasting) hardly less than for revealing it.

"I fancy that the variations in word-order found in different languages are due less to any deep psychological reason connected with the subject-matter, than primarily to the fact that, since we cannot talk monosyllabically, one element must necessarily come before the other. Some languages plump for 'The lion roars,' others for 'Roars the lion,' when 'roars' is real predicate."†

ALAN H. GARDINER.

England: Archæology. Moir.

Two Late Bronze Age Urns from East Anglia. *By J. Reid Moir.* **3**

The two Late Bronze Age Urns to which this note refers were found respectively near Manningtree, in North Essex, and at Ipswich. The Essex specimen (Fig. 1) is now preserved in the British Museum (Bloomsbury). It was found at Brantham, near Manningtree, and presented to the British Museum in 1914, by Mr. J. E. Keeble, of Brantham Hall. The urn was found at a depth of 3 feet from the surface of the ground, and, so far as is known, did not contain anything of archæological interest. The Suffolk specimen (Fig. 2) is preserved in the Ipswich Museum, and was found at a depth of 3 feet from the surface of the ground, in a field to the north of Hadleigh Road, where the Ipswich Corporation is raising gravel. In one of my periodical visits to this excavation the workmen handed me several large pieces of pottery, and indicated exactly where the specimens had been found. It was clear that a digging had been made in the old river-gravel at this spot, which is at the bottom of the main valley, and in close proximity to the canalised River Gipping. The ancient excavation was, at the time of the discovery, still plainly visible in the stratified river deposit. The urn contained a quantity of black, burnt material, amongst which occurred a number of ossiferous fragments which have been identified by Professor Keith as calcined human bones.

* May it not, then, be said that what is now most required for the progress of linguistic science is the study of comparative Rhetoric?

† Old Egyptian places the verb before the nominative, unlike modern European languages. It agrees with these, however, in making a prepositional or adverbial complement (*e.g.*, "He is there." "He is in the house") follow the nominative, even when the sense is "The one who is in "the house, is there, is he"; probably this is due to the fact that a prepositional or adverbial phrase always appears of subsidiary importance, and therefore is not allowed to occupy the position of honour. It would be interesting to investigate the reasons why (1) deictic or demonstrative words, (2) interrogative words, and (3) personal pronouns tend, as they undoubtedly do, to push their way to the beginning of sentences. In the case of (1) I fancy the solution has something to do with gesture; in the case of (2) a powerful factor seems to have been the desire to reserve to the interrogative word the same position as the corresponding word in the answer will occupy, *e.g.*, "Who did it?" "*He* did it"; Egypt., "He went away on account of *what*?"; in the case of (3) it would not be surprising if pure egoism lay at the root of the usage. I throw out these remarks as examples of some topics that call urgently for investigation along comparative lines.

It is thus clear that the Ipswich specimen may be regarded as a cinerary urn, and it seems probable that the Brantham example had a similar use. So far as can be gathered, urns of this particular form and ornamentation are not common in this country, but Mr. Reginald Smith informs me in a letter that a specimen of very similar appearance to those here described, but differing from them in having an arcaded arrangement of the indentations above the band, is described in *Trans. Essex Archæological Society, New Series*, Vol. IV, 18. The Brantham urn is 17½ ins. high, and the photograph accompanying this note has been forwarded to me by Sir Hercules Read. The Ipswich specimen is 13 ins. high, 12¾ ins. wide at the mouth, the lip is ¾ in. thick, and the moulding or band projects to the extent of

FIG. 1.

FIG. 2.

TWO LATE BRONZE AGE URNS FROM EAST ANGLIA.

½ in. I am indebted to Mr. Frank Woolnough, Curator of the Ipswich Museum, for the photograph of the urn found near Hadleigh Road. J. REID MOIR.

Linguistics. Breton.

Notes on Pokomchi (Guatemala). *By A. C. Breton.* 4

The following extracts are translated literally from the Spanish-Latin and Pokomchi manuscript vocabulary of the seventeenth century in the museum library of the University of Pennsylvania at Philadelphia. About 300 Latin adverbs, prepositions, etc., are treated in the fragment remaining of that section, and *Iuxta* is a fair specimen, though some others have more phrases from the Vulgate, often with two or three versions in Pokomchi. There are 270 Pokomchi verbs in the general vocabulary and in the section on Pokomchi nouns, also equivalents in Pokomchi for 260 Spanish verbs. Herewith is a small portion of an Abstract which I have condensed from the verbs.

Although the manuscript is only a fragment of the original works, it will be seen how much valuable information can be obtained from it, representing as it does the earliest form of this language known to the Spanish missionaries. The priest-author constantly quotes from the writings of Padre Francisco de Viana, who died in 1600, and the document is an autograph, carefully written, but with the

syllables often separated, as usual at that period. Careful study enables the Pokomchi words to come out correctly, but it is difficult to judge whether the various pronouns and particles should be joined to the words they qualify or be kept separate. Gaps in the manuscript prevent full study, but with 290 closely-written pages, something can be learnt of this almost unknown language.

The phrases given in the extracts show the method of composition, which is very different from that of Maya, with which Pokomchi was supposed to be affiliated. There are words in common but there are more differences. The hard double *c* (*k*)* usually occurs at the end of a verb. It is used rather arbitrarily by the author.

1. The Latin Iuxta in Pokomchi.

Iuxta, near (preposition). Sometimes used for: (*a*) after; (*b*) according to; (*c*) at the same time, equally, in the same manner. All these different meanings in Latin can be rendered in Pokomchi:

Ambulans Jesus iuxta mare Galilee.

Na oc ru be Jesus chi chi ru quiknab ah Galileo.

Taking his way Jesus along the edge of his lake [of] the Galilee.

Here one *chi* is the preposition; the other *chi* = the edge.

A blind man clamoured by the way, or at the edge of the way.

Na ru silcanic moyvach chi chi be.

In some cases *chi chi* will not serve, such as:

Iuxta domum meam habet suam Petrus.

(1) *Cochlic ru pat Pedro chi rih nu pat.*

(2) *Ma naht rue nu pat vilic ru pat Pedro.*

Close to (not far from) my house has Peter his house = *ru pat.*

"Not far" is also used for nigh: "Bethany was nigh unto Jerusalem" = *ma naht vilic Betania rue Jerusalem.*

"Nigh is the day of the Lord" can have several versions: (*a*) *ntal chaloc* (*b*) *minlic chaloc*, (*c*) *ma naht chaloc vilic ru quih nimahual.*

For "Near me," "Near thee" use *ruc*, *anum*, in the sense of With me, "Come hither to me" (*Quim ayu ruc*).

In the sense of "According to" use *he*, comparative: "I did it according to thy word" (*Xnu ban*: (*a*) *he noc na cor vein*, (*b*) *he noc a coral vein*, (*c*) *he noc nu cubal hic anum.* "According to the traditions of our elders" ((*a*) *He noc coroh cuumtague ca mam cahau*, (*b*) *he nahtir tch nahtir aabal.*)

"Why do thy disciples not respect the traditions of the elders, to do according to the men of the past?"

(*a*) *Achipa ah vua ma ngui ninoh atihumistagua quitubal toxom naxtir vinak?* (*b*) *Achipa ah vua ma qui toih atihumistague chipam quitubal quitibbal banoh, quitibbal avic na maib nahtir vinac?* (*c*) *ma ngui ninoh nahtir tih nahtir cubal?*

The *iuxta* may be omitted in phrases that do not require it, as: "They walk "not according to my laws" can be rendered "They follow not my laws" (*Ma ngui toqueh nu cabal nu catbal corik*).

Adolescens iuxta viam suam etiam cum senuerit.

He ru banoh ru be acun chi rahnel he no ru be chu rih hic.

In his doings and goings a boy, even though he were old.

Use the preposition *chi* = in, for "And the fruit tree yielding fruit of the orchard after its kind" = *Ruk tulul tih vachom che chuhuhunbural.*

Hunbur means a different species. With the possessive, and adding *al* — *bural*

* The *k* used here for want of a special letter does not give the full force of the sound, which should be strongly guttural. The author says: Allá dentro el gaznate, con gaznatada (Inside the windpipe, with a blow on the gullet).

= *ruhumbural*, and joining the preposition *chi*, the possessive loses the *r*, the *chi* loses the *i*, the *ch* is joined to the *u* of the possessive and becomes *chu*. "The fowls after their kind" (*Re ahic tziquin chuhuhunbural*). [Doubling the *hu* gives greater emphasis.] *Ha*, with soft *h*, or without one, can be added, meaning continuation, regular order; *chuhuhunbural ha* = every possible kind of species, omitting none.

(2) The Word *Nim* (Great) in Pokomchi.

Nim and its derivatives are treated with special fullness in the Vocabulary, though unfortunately the first part is missing both in the general vocabulary and in that on Pokomchi nouns.

. . . *In nim* = I am great, honoured, esteemed. Adding *cuxl* (heart), with the possessives, *nim nu cuxl*, *nim a cuxl*, I am, thou art, spirited, confident, audacious, brave, fearing nothing, and a thousand things in the same style. The suffix *ac* makes it imperative. *Nimac a cuxl* = take courage, strengthen thy heart. *Nimac a cuxl at vucua* = have faith in the Son. *Nimor* = let it be great. *Nim vach* = wide [*vach* = face, used in a general sense]. *Nimlah vinac*, an old man or woman who is superior, great in qualities or possessions. *Nimlah vinac noc vilic pam tenamit*, he is a man of quality, of consideration in the town, or a man who has property and is esteemed and respected. *Nim vinac* (without *lah*) *noc vilic* = an honourable man. *Nim loc* = esteemed. *Nim cayeu* = difficult, arduous. *Ah nim* = the respected the companion. *Vah nim* = he who is in my company, or with the possessives, *vuch*, *avuch*: *vuch ah nim* = my companion on a holiday, sporting together, or the same age (*uch* = companion). *Nu nim*, *a nim*, *ru nim*, my, thy obedience, respect, reverence for another, from the verb *nimah*.

Nim is also an adverb, greatly. *Nimak* (plural) many great things.

Nima (verb), with accusative *cuxl*, *cha nima a cuxl* = keep up thy spirit, either for some difficult work or in affliction.

Nimab (verbal noun), *Dios ru nimab nu cuxl*, God is my strength, my confidence. *Quijb, iaib nu coral un cor ave nimab re a cuxl* = I will say two or three words to strengthen thy heart.

Nimah (active verb), to honour in every sense. *Quinoh a nimah tik pam nu pat* = honour me with thy company in my house. *Nimhic*, verb passive; *nimanic*, verb absolute.

Nimahual Dios, the Lord God [this is described in the missing part].

Nimal, grandeur, majesty, in quantity or quality. *Nimal cucal tepeual*, absolute glory, dominion. *Taxahil nimal*, celestial grandeur, majesty. *Vach acalil nimal*, earthly honour, greatness, nobility. *Ru nimal tenamit*, *ru nimal amac*, the chief dignitary of the town, of the people. *Re ca nimal ru* = This is our chief—whether in size, age, or dignity. Plural, *nimquil*.

Cha chi xiac chi xilan kinah pah ru nimal unchel.
Choose from amongst them the greatest.
All are equal, no one is superior. *Huvet unchel, machi ru nimal, ru nimquil.*
Ru nimal angelesaque aoc vilic S. Miguel or taxah, nalcahic ruuntaque.
Highest amongst the angels is St. Michael there in heaven, honoured by his fellows.
Atac acux vinac atac ayaimocmab cha nimahtac cha albihitac acunatilac nuihachihilac, mutiili aoc quenalilac vuo unchel anisalias pot ai achic ai aoanhic chonachtac chivach acal.
You young folks should reverence and respect your old men and women, all your elders, whilst you young ones exist on the face of the earth. [This gives the reverential forms]

Nim amail, violence, force. *Nim amail xucamul* = he took it by force.

Nimanic, absolute verb of *Nimah*, and because it is much used in other meanings as neuter, it is placed separately: (*a*) To live long. *Ti nimanictah quijlah may chihab chivach acal* (May you live many tens of twenties of years on the

face of the earth). (*b*) To remain a long time in one place: *Ti nimamoctah chi ca xilac* = May you remain long among us. *Mo xat nimanic chi ca xilac* = You did not remain long among us. (*c*) Divert oneself: *Cohoh nimanoc rohi* = Let us go there for a little recreation. *Xa nimanic cuh chi pam ca nimquih* = Thou hast enjoyed our festival with us. *Quinul nimanoc tih awah* = I am come to rest awhile with you for recreation.

Nimaxc, much used for growth of body, to grow up.

Nimbal (verbal noun of *nimah*), obedience, honour, reverence.

Nimcaxih, to increase in size, whether animals or trees, and in faults and sins or virtues: *Nimcaxih mak paw tenamit* = Transgressions are increasing in the town.

Nimic, to grow in body, not much used.

Nimquezah (compulsive of *nimcaxic*). They do not say *nimcaxcah*, as might be expected. *Cha nimquezah ca tzimo* = Fatten our pig [*tzimo*, Spanish].

Nimquih, high day, day of solemn festival.

Nimquihah (active verb), to celebrate, as the festival of a saint.

Nimquihinih (absolute). *Nxaimquihinih amac* = There is a festival of the people, the *Coh nimquihinih* = We are keeping holiday. *Quinah nimquihinac* = I am going to the festivity.

Nimquil (with possessive, plural, same as *Nimah*), great. *Ca nimquil*, our great ones, either in dignity, age, or person, according to the subject spoken of. *Re hinah ru nimquil* = This is one of the principals.

Nimrih (the same as *nimih*, not much used), to grow in body.

Nimrezah (compulsive of *nimrih*), to aggrandise; used mainly for magnify, honour, though *nimzah* is more used.

Cha nimrezahtac chi coric nimahual atac awan.

Praise, magnify with speech, the Lord, all ye children.

Cha nimrezahtac chi coric nimahual atzic awunchalahtac rubanah nimahual.

Praise, magnify with speech the Lord, all ye works of the Lord.

*Nimrezhic, nimremah, nimrexanic, nimrexom.** *Nimrexom rih*, proud, self-conceited.

Nimtesah, not much used except its verbal nouns and the passive *Nimtesbik*.

Nimtezbal (verbal noun), praise. *Nimtezbal re Dios chi coric* = praise to or of God. *Nimtezbal ibix*, self-esteem, self-glorification. *Nu nimtezbal uib, a nimtezbal awic* = my, thy pride, vainglory, and with *chi coric*, self-praise.

Nim xyaek, very late in the evening.

Nimzah (compulsive of *Nimic*), similar to and more used than *nimrezah* and *nimtesah*, to glorify; with reciprocal accusative, *nu nimzuh vib, na nimzah auib*, to boast, blow one's own trumpet. *Nimzanic*, verb absolute. *Nimzanic ibix* = haughtiness, presumption.

The Latin Nimis = greatly, comes amongst the adverbs, Pokomchi equivalents being *yah, cax, ru ri, ru cor, tih.*

Ru ri chi nim nimahual Dios yah rurulum chi nim hic.

Great is the Lord and highly to be praised.

The *ru ri chi nim* emphasises the supreme grandeur of God; the great Lord God is the most high in greatness. *Yah* is the nimis, greatly, worthy to be praised. Magnus nimis = *yah nim, cax nim.*

3. Abstract of some Pokomchi Verbs.

Abakrezah, to make something blacken itself with soot.
Abakquek, to blacken with soot.

* Various forms of the verb.

Anguilanik, to work at building an edifice.
Anzilak, to do something with force, with spirit.
Anzilanic (absolute), to force.
Anawch, to mould.
Anazek, to prohibit.
Aycalek, to possess, hold. *Aycalkic* (passive).
Aycalric (neuter), to make oneself rich.
Azch, *Azik*, *Atzik*, to take as an elder brother. *Azenic* (absolute of *Azek*). *Azinak* (participle).
Azik (active), to give birth.
Azinic (absolute of *Azik*), little used. *Acanch*, *Acananic*, are more common.
Azkic, to be born (an infant). *Azkenac* (preterite participle).
Babtsch, to row, use oars [*oar*, *babte*].
Bak, to tie up, using many turns of the cord.
Bacamek, to use a banner [*bacam*]. *Bacamekic* (passive).
Bakrik, to make oneself bones, become thin.
Bakrenak, turned into bones, as a dead person in a grave.
Bacrecak (compulsive), to make thin.
Canknk (active), to wake a person from sleep.
Cananic (neuter). *Canacatik* (frequentative), going always enraged, annoyed. *Nean-catik nucurl ra*, my heart is always grumpy.
Canek, to take captive in war, to capture a city, to hunt animals. It is related to *can*, to find.
Chor (active), a way they have of making fire. They take a dry stick and make a small hole in it, hollowing it a little, and put round it the tow, and placing another small hard stick with its point in the hollow, they whirl it with great force with both hands, till it catches fire and lights the tow; (2) To drill wood with a long point between the hands as we do with the mollinillo; (3) To beat chocolate with the mollinillo. *Chorcrik* (passive).
Chorak, *chorek* (active), to pour out water.
Chorik, the *r* strong (neuter). *Chorcotik* (frequentative of the last), to be running with water (canals).
Chot (active), to strip a plant of leaves as the locust does.
Chuack, to make mud, clay.
Chuararic (rather strong the *r*), to make itself mud.
Chuarezak (compulsive), to turn it into mud.
Chubek (active), to spit.
Chubalek, to backbite, disparage (as *chalek*). It means more than *cuthak*. *Ak chubal* (absolute participle).
Chubic (neuter), to soften oneself; used for the remedying of an evil, as of sickness.
Chuk has more meanings than letters: (1) to pull up herbs with the hands; (2) to pluck a fowl; (3) to tear out someone's hair; (4) to break a cord or rope; (5) giving it as accusative *corie* (speech), it means to feign, invent phrases, lie; (6) with accusative *chi* (mouth), *xu chuk nu chi* (he falsified my mouth), he who in my name went to ask or say something, I not having said it nor given the order. *Chucuik* (the absolute). When a dying person has expired, they say *xchuk ru cural* = now has the soul been torn out of him. *Chucurik*, passive.
Chuca, to tie living things to the post, as an animal, a hen, the culprit. *Chuelic* (participle of third person singular), he who is tied; metaphorically, to be tied or subject to another. *Chucuk* (plural). *Chucuik* (absolute). *Chiquik* (neuter).

Chucul (absolute participle of *chuk*). *Chuculquin*, I am tied. *Chuculcat*, thou art tied. *Chuculcoh*, we are tied. *Chuculcatac*, you are tied.

Chuchah (active), to suck. *Chuchezah*, to give suck. *Chuchezhic* (passive). *Chuchik* (neuter). *Chuchehzam* (absolute participle), she who gives suck, the nurse.

Chumayah, to measure from the elbow to the point of the hand, the hand outstretched.

Chumbah, to drink in gulps.

Chumah (active), to worry oneself about something.

Chumuchutik (frequentative), to go anxiously. *Chumik* (neuter).

Chumilah, to paint stars on something.

Chunah, to limewash. With *cuel* (heart), to desire something. *Yah chunat nu cuel*, very desirous am I. *Chunrezah* (compulsive), turn into lime.

Chunrik, to return into lime, as limestone when burnt.

Chupah (active), to cut up a tree.

Chupaymah, to soap. *Chupaquemah* (passive).

Chup (active), to extinguish. *Chupic* (neuter).

Chupchutik, to extinguish itself. *Chuplik*, extinguished (participle). *Chupup*, plural.

Chuquah, to pull hair; to drag by the hair, as a man does to his wife. *Chukkic* (passive).

Churah, *churuh* (the *r* rather strong), to pour water in a small quantity, as from the spout of a vinegar bottle.

Churik (short *u*, strong *r*), to pour, like *churih*.

Churlunih, to pour in drops rapidly.

A. C. BRETON.

Textile Art. Linq Roth.

American Quill Work. *By H. Ling Roth.* 5

With regard to Mr. Marwin's interesting article on "The Art of Quill Work" (*The Museum Journal*, Philadelphia, March, 1918, pp. 50–55), reviewed in MAN, 1918, 97, the following notes may perhaps be of interest.

Mr. Marwin emphasizes the belief—and so does the reviewer, A. C. B.—that the art of quill work is distinctly American. When I wrote my paper on "Moccasins and their Quill Work" (*Journ. Roy. Anthr. Inst.*, XXXVIII, 1908, pp. 47–57), I was under the same impression, namely, that quill work was an American invention, and so far as *porcupine* quills are concerned I still think so. But a few years ago a much-travelled lady, Miss Deakie MacNab, informed me that she had seen quill work somewhere in the Tyrol, and since then, in a book entitled *The Brenner Pass*, by Constance Leigh Clare (London, 1912), I find two references to quill work, also in the Tyrol—the one at Brixlegg and Rattenberg, on the Inn in the extreme north of the Tyrol (p. 32), and the other in the Passeier Thal, between the Oetzthal Alps and the Sarnthal Alps (p. 27). In neither case are we informed whether the quills used were those of porcupine or of goose; most probably they were the latter. I was proceeding in the matter of obtaining specimens when the war broke out, and since then I have heard nothing of them.

Mr. Marwin refers to the concealed sinew which holds the quill, but does not mention that this sinew is held in position by still more concealed loops raised on, and forming part of, the surface of the leather foundation ("Moccasins," Figs. 13, 15, 17, &c.). Nor does he mention that it is only the small tail quills which are used; indeed, I cut my fingers very severely in trying to do the work with the large body quills, until Miss Mary A. Owen put me on the right track by informing me that only the tail quills are used.

As regards the centre panels (Marwin's Plate II) and the specimens shown in

Figs. 15 and 16 of his article, which at first sight nearly everyone thinks are made of beads, this method of quill ornamentation is, I think, made on a special frame which I described a short time ago as a quill belt loom ("Studies in Primitive Looms," Part I, *Journ. Roy. Anthr. Inst.*, XLVI, 1916, Figs. 29 and 30).

All the Bankfield Museum quill work moccasin specimens and the frontlet illustrated in my paper are not far off eighty years old, having formed part of the early collections of the old museum of the Halifax Literary and Philosophical Society, founded in 1832. In Bankfield Museum of about the same date we have some old-fashioned pouches; also a man's jacket and full-length leggings, both covered with various quill patterns, about thirty years old. There must be a considerable quantity of quill work specimens in the old collections in our English museums which should be worth investigating.

Not the least interesting point about this quill work is the altered forms in which we now see it. The exotic bead work ornamentation being easier to produce than quill work, has nearly everywhere driven out the old style of decoration, but the latter seems to be holding its own in one form at least—on birch-bark boxes, which with the shouldered bottom part appear to me to be also innovations. In the form in which it is attached to these boxes the pointed ends are merely driven in and held in position by the elasticity of the bark, while in the machine-made moccasins of the present day the quills are bunched and sewn in, the binding thread going right through the leather, and not merely through the surface, so that the original art is quite lost.

H. LING ROTH.

Gold Coast Colony: Archæology. Migeod.

Discovery of Paleoliths and Pierced Stones. *By F. W. H. Migeod.* 6

I. PALÆOLITH.

The finding of stone implements of palæolithic age is so rare in West Africa that every discovery, I think, deserves record. In MAN, 1916, 36, I referred to a presumed palæolith I picked up on the road 45 miles north-east of Kumasi in the "dense" forest area. I have recently found another near Ejura, 60 miles north-east of Kumasi, on a hill-top in the "savannah" forest region. The stone lay half exposed. The tendency there would seem to be denudation rather than accretion of soil. The stone measures $2\frac{3}{4}'' \times 1\frac{1}{2}'' \times \frac{1}{4}''$. It is chert with a twist to it. In appearance it is very like the implement (from Broom, Dorset) shown on p. 29 of the British Museum Guide to Antiquities of the Stone Age, 1911. Half of one side is in its rough state. The upper part of one edge seems to have been used as a cutting edge. It would seem to be of Pre-Mousterian type.

II. PIERCED STONE.

(*a*) This I also picked up at Ejura by the roadside. It had evidently been recently found by a native and dropped there. Its dimensions are: diameter, 6 inches; thickness, 2 inches; diameter of hole, smallest over $\frac{1}{2}$ inch. Hole slightly oval, picked out as usual and cone shaped each side. One side of the stone had been broken in ancient times, and there are pick marks on it showing it was unearthed when the motor road was made. The material is granitic, and it is permanently stained red from resting in the clay (laterite), except where the pick marks show. No native to whom I showed it could suggest a possible use.

(*b*) Another pierced stone has also been shown me lately. It was found at Mampong, near the stream which supplies the town with water. The distance

is 25 miles from Ejura and 26 from Kumasi. This stone was not coloured red. It was oval in shape, and thinner than the other. It seemed to be also granitic.

(c) I am told that small pierced pebbles may be picked up in plenty in the northern part of Togoland. F. W. H. MIGEOD.

REVIEWS.

India: Musical Instruments. Meerwarth. 7

A Guide to the Collection of Musical Instruments Exhibited in the Indian Museum, Calcutta. By Dr. A. M. Meerwarth. Calcutta, Government Press: 1915. 8vo. 37 pp. XIII Plates, paper covers. 8 annas.

This little publication will be welcome to many who are interested in the early history of musical instruments, or who have any Indian musical instruments under their charge, for the numerous illustrations, if small, are fairly clear, and will enable the student to distinguish and to name any such instruments he may possess or be interested in. We are also told something about the methods of using the instruments, the occasions of their use, and a little of their history; the information as to the locality of provenance will be of considerable use. The author's remarks, however, on p. 9, regarding the origin of the fiddle and fiddle bow makes one think he has never heard of Balfour's *Natural History of the Musical Bow*.

The brochure can in no sense be accepted for what it claims to be, namely, a "guide." As a guide it should tell us to what notes the stringed instruments are tuned by the natives as well as the intervals of the frets, and a comparison should have been made with the intervals on modern instruments and between European and ancient and modern Hindu or other Asiatic instruments, and by such knowledge we could have gained some real insight as to what the instruments are capable of. Instead we are treated to remarks like the following: "The tune [*sic* ? tone] is "sweet and soft; it reminds one rather of the old clavichord."

Information as to the compass of the wind instruments is equally lacking; the tone of each should have been given, so that the essential comparisons with modern European instruments could be made, and the position of the Indian instrument fixed. Even if, as the author says, the musical value of an instrument like the Nepalese snake-shaped horn, No. 75, is nil, all the same the student should be told what can be done with it. If the author does not know to what the instruments are tuned, he could at least have obtained the assistance of any of the able English military bandmasters to be met with in India. Finally, the author misses a splendid opportunity of telling us what an Indian native orchestra supplied with native instruments can do, when he dismisses the reference to the late Raja Sir Sourindro Mohun Tagore's munificent gift of an orchestral set with the words, "Here we meet "again the aristocracy of India's musical instruments, this time unmixed with the "lower ranks of shepherd-flutes and juggler drums." H. LING ROTH.

South America: Spinning. Frödin and Nordenskiöld. 8

Ueber Zwirnen und Spinnen bei den Indianern Südamerikas. Otto Frödin und Erland Nordenskiöld. Göteborg. 1918.

This interesting and well-illustrated account of the making of thread and yarn, with and without the spindle, by South American Indian tribes, is an important contribution to the study of the subject. The authors describe the chief materials employed, pointing out that plant fibres are made use of all over the region, except in Tierra del Fuego and neighbouring areas, where sinews and strips of skin predominate. Wool as well as plant fibres are employed further north, and some account

is given of the plants from which the fibres are taken, and of the methods of preparation. Over the greater part of South America the cotton plant is all-important, and it is cultivated by many tribes of Indians. The authors do not give a definite conclusion as to whether the cultivation arose independently in the Old and New Worlds, but they believe that the use of a bow for teasing out and cleaning the cotton is due to missionary influence.

Twisting by hand occurs all over South America, though it is only found in use exceptionally in the case of wool and cotton. It is done on the right thigh with the right hand, the left hand "feeding."

No spindle is employed in Tierra del Fuego, nor amongst some Arawak tribes and others. Wherever the spindle is used, cotton is spun, and generally wool also. Women are usually the spinsters, but amongst the Bororo the work is entirely undertaken by the men.

The spindles and the methods of use are described as falling into two main groups, which are classified as the *Bororo* and the *Bakairi* respectively. The former is the less widely distributed, and the authors regard it as the more primitive.

The Bororo type of spindle is carefully shaped and smoothed, and the whorl is near the end at which the yarn is formed; there is no hook or nick at either end. When in use the spindle is kept horizontal, and is rotated on the thigh or calf. The end to which the fibres are attached—what may be called the short end of the spindle—is in most cases supported between two of the toes of the left foot, and thus rotates in a natural bearing.

The Bakairi type of spindle is usually not so well-finished as the Bororo, and is in most cases thickened at the lower end, the other end often having a hook or a nick. The whorl is often, but not always, low down on the shaft, and in the forms with a hook (only found in Guiana and on the Amazon) the whorl may be at about the middle of the stem. In spinning, the fibre is attached to the upper end of the spindle—that is, the longer end, or that which has the hook. The work may be started by rotating the spindle on the thigh, but it is at once brought to a vertical position; or the twist may be given in the air, or on a plate or shell resting on the ground. The Quichua and the Aymara often use the pastoral method of spinning whilst walking.

The authors' conclusion that the rotating of the spindle on the thigh is the more primitive seems clearly the correct one, and it may be agreed that the emancipation of the spindle from the horizontal position was an advance. It was, however, an advance that was soon held up, in spite of the fact that it enabled the work to be done when the limbs were clothed, and even whilst the operator walked. There are, however, certain improvements in the Bororo method which have much greater interest, since they seem to throw a light upon the origin of the spinning-wheel in its simplest form. These variations are, according to the authors, to be regarded as developments which took place in South America itself, and this conclusion appears to be in accordance with the evidence. It is tempting to believe that at a distant period similar variations arose in the Old World, and led to the production of the spinning-wheel. The particulars of the modifications may be described in a few words.

Some tribes (though not the Bororo themselves) who use the horizontal spindle, rotate it on a billet of wood, or the upper surface of a stool, which thus takes the place of the thigh. Further, this appliance may be used in combination with the toes as a support, or these may be supplanted by a wooden fork or rest. The combination of these two additional parts suggests more than a mere emancipation from the thigh and the toes. It has always—to the present writer, at any rate—been difficult to picture the way in which the spindle first found its way into bearings, and

so permitted of the development of the spinning-wheel. Here we have one end of the spindle fitted into a very definite form of bearing, and though the other end is still moved, as well as rotated, on the artificial thigh, it is not difficult to imagine how this end also may have been given a fixed bearing. The wheel of the spinning-wheel may safely be regarded as an application of a principle already known in the Old World. The fundamental step in the development of the spinning-wheel was certainly the provision of bearings for the spindle, and if in the Old World this left the thigh and the fork of the toes for supports similar to those just described, there is little difficulty in picturing the evolution—if the word is not obsolete—of the spinning-wheel itself. The writer is not acquainted with any Old World appliances similar to those of the tribes using the modified Bororo methods, and the authors of the book under review make no reference to any deductions which may be drawn from these methods; it would be of interest to know if they have endeavoured to find Old World parallels.

Since there has been some uncertainty as to the use of the well-known spindle-like objects found in the graves of coastal Peru, and especially as Crawford's view that they are not spindles has gained considerable acceptance, it is worth noting that the authors make out a good case for the reinstatement of the objects as spindles (of the Bororo type) used also as spools.

Many quotations are given from ancient and modern authors, and it is interesting to note that the paper, written in German by Swedish investigators, contains extracts in some seven other languages, but none in Swedish. There are useful tables and maps of distribution, and the illustrations are numerous and clear. H. S. H.

ANTHROPOLOGICAL NOTE.

Accessions to the Library of the Royal Anthropological Institute. 9

(Donor indicated in parentheses.)

Folklore in the Old Testament: Studies in Comparative Religion, Legend, and Law. By Sir James G. Frazer. In three volumes. 9 × 6. 569, 571, 490 pp. Macmillan and Co. 37*s.* 6*d.* net. (The Publishers.)

Archæological Survey of India, Annual Report, 1915–6. Edited by Sir John Marshall, Kt., C.I.E. 13¼ × 10¼. 116 pp. LX Plates. Government Printing, Calcutta. 27*s.* (The Superintendent.)

A Naturalist among the Head-Hunters, being an Account of Three Visits to the Solomon Islands in the Years 1886, 1887, 1888. By C. M. Woodford. 7½ × 5¼. 242 pp. 16 Illustrations and 3 Maps. Petherick and Co., Melbourne. (The Author.)

The Astronomical Observatories of Jai Singh, by G. R. Kaye, *Archæological Survey of India, New Imperial Series*, Vol. XL. 13 × 10. 145 pp. 26 Plates. Government Printing, Calcutta. 23*s.* net. (The Superintendent.)

Prehistoric Halifax, Part III. By H. Ling Roth. 9½ × 7½. 37 pp. Illustrated. King and Sons, Ltd. 2*s.* 6*d.* net. (The Author.)

Eyre and Spottiswoode, Ltd., His Majesty's Printers, East Harding Street, London, E.C. 4.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

A PIECE OF CARVED CHALK FROM SUFFOLK.

ORIGINAL ARTICLES.

Antique Sculpture. With Plate B. Moir.

A Piece of Carved Chalk from Suffolk. *By J. Reid Moir.*

10

In the early part of this year (1918) my friend, the Honourable Robert Gathorne-Hardy, found lying upon the surface of the park in which his residence, Great Glemham House, Saxmundham, stands, the piece of carved chalk to which this note refers. Mr. Gathorne-Hardy is, unfortunately, unable to remember the exact spot where the specimen was found, but, after having gone over the terrain in company with the discoverer, it seems to me in every way probable that the carving was brought to the surface by the action of rabbits, whose burrows are very numerous at Great Glemham.

If reference is made to Plate B (Figs. 1 and 2), it will at once be seen that this piece of chalk bears, in its outline, a rather close resemblance to the outline of the mammoth (*E. primigenius*) with which the scientific world has become familiar by an examination of the carcases of this animal found in the frozen ground of Siberia, and by the drawings and outlines upon bone and other materials discovered in the Aurignacian and later Palæolithic deposits in France and elsewhere.

I have prepared a rough outline drawing of the mammoth (Fig. 5) so that the significance of the form of the piece of chalk under description may be realised.

It will be noticed, if comparison is made of the photographs (Plate B, Figs. 1 and 2) and the above-mentioned outline drawing, that the peculiar mound-like form of the top of the mammoth's head is portrayed more or less successfully in the chalk model. In my outline drawing I have purposely omitted putting in the tusks of the animal, as these do not appear in the carving. The curious downward slope of the mammoth's hindquarters is also well depicted.

OUTLINE DRAWING OF WOOLLY MAMMOTH
[*Elephas primigenius*]

Fig. 5.

The hard piece of chalk (which is of a dull white colour, and has sandy material cemented in the interstices) from which the statue has been formed was evidently derived, originally, from the chalky boulder clay (which deposit is exposed in a pit near Great Glemham House), and it appears that on one side of the carving (the left lateral surface) a portion of the old striated surface of the nodule has been retained, the striations giving a realistic impression of the hair which we know the mammoth possessed in abundance (Plate B, Fig. 1). It will be noticed, also, that a small, narrow incision in the head of the statue (Plate B, Fig. 1) simulates the appearance of an eye.

When we turn to the view of the ventral surface of the carving (Plate B, Fig. 3) we notice that the four legs, penis, and belly of the creature are depicted in a remarkable and realistic manner. An examination of this surface shows that in all probability the hind legs and penis (which was probably represented extended) have been broken off in ancient times, and this may also apply to the trunk, the lower end of which is visible in the photograph. The right lateral side has evidently been extensively fashioned, as none of the original surface of the nodule of chalk is visible upon it.

The sculpturing of the head, ear, eye, trunk, and elephantine-like foot is very striking, and testifies to the skill and accuracy of the ancient craftsman. The dorsal view (Plate B, Fig. 4) shows the well-sculptured back and posterior portion of the head, and it appears that an effort has been made to represent a tail.

When the sculpture was complete and unaroded it must have presented a quite remarkable appearance, and the pose of the legs shows that it was intended to portray the animal as if in rapid motion. The area which has been modified by sculpturing exhibits an entirely different surface from that portion of the left lateral side which shows the original striated surface of the nodule of chalk.

Though the specimen during the passage of time—for it bears every sign of antiquity—has suffered slight erosion, it is still possible to discern, with the aid of a Coddington lens, upon the fashioned area, the thin, narrow lines caused by the implement which was used in the sculpturing process. A very well-marked cut is also observable at the back of the head, and evidently imposed when this portion of the statue was being formed (Plate B, Fig. 4). It is clear to me that these thin lines were so caused because I have conducted some experiments in carving chalk from the boulder clay, and find that similar lines were produced by the sharp-edged flint which I used But whereas the lines upon the experimental specimens are clear and sharp, those upon the ancient sculpture have suffered partial obliteration by some eroding action (possibly that of vegetable acids) in process during its burial in the material in which it has lain.

Mr. Gathorne-Hardy's painstaking and important researches have established the fact that in the neighbourhood of his house certain ancient occupation-levels occur buried some feet beneath the present land surface. I have examined the flint implements recovered from these floors, and would refer a proportion of them with some amount of certainty to late Palæolithic times, when, as we know, carvings of a similar nature to that described above were produced upon the continent of Europe. So far as my knowledge goes, examples of carved chalk have been found before at only one site in this country, viz., the famous flint mines at Grime's Graves in Norfolk.* But this important discovery by Mr. Gathorne-Hardy, which it has been my privilege to describe, will no doubt open the eyes of archæologists to the further possibilities of finding examples of the artistic work of late Palæolithic man in England.

J. REID MOIR.

NOTE.—The piece of carved chalk described measures 6¾ inches in greatest length, 2⅞ inches in greatest height, and 2¼ inches in greatest width.

India: Ritual. **Crooke.**

Hut-Burning in the Ritual of India. *By W. Crooke.* **11**

The use of extemporized huts in ritual is a question of some interest. Ovid describes how, at the festival of Anna Perenna, on the Ides of March, some people lay in the open, some constructed tents, and some made rude huts of stakes and branches, stretching their togas over them to form a shelter.† Similar huts used at a Roman rural festival, and at the Neptunalia, on 23 July, resemble the Jewish custom at the Feast of Tabernacles.‡ Mr. W. W. Fowler,§ discussing these and similar examples, follows W. Robertson Smith in comparing with them the rule that after bloodshed men might not enter their houses till they had undergone a rite

* Prehis. Soc. East Anglia. *Report on the Excavations at Grime's Graves, Weeting, Norfolk*, p. 206, etc. Smith, R. A.: *Archæologia*, Vol. LXIII, 1912, p. 118.

† *Fasti*, III, 695 *ff.*

‡ J. Hastings: *Dictionary of the Bible*, IV, 668 *ff.*; *Encyclopædia Biblica*, IV, 4,875 *ff.*

§ *The Religious Experience of the Roman People*, 478 *ff.*

of purgation.* "We must," he remarks, "be content with the general principle that "the holiness of human beings at particular times is liable to carry with it the "practice of renouncing your own dwelling and living in an extemporised hut or "booth." The idea of sanctity and of tabu due to pollution are so closely linked together, that it is easy to understand why persons in this condition are not allowed to enter a dwelling-house lest they may so defile it that it is unfit to be used by other members of the family. Sir James Frazer has collected numerous cases of this kind in which persons under tabu, women at the period of menstruation and in childbed, are secluded in separate huts.†

The practice, confined, so far as I am aware, in this special form to India—that of the burning by barren women in the hope of procuring offspring of straw huts or pieces of the thatch—forms the subject of this paper.

Attention seems to have been first called to this practice in the Panjab by the late Sir Denzil Ibbetson.‡ He noticed as a common belief among Hindu women, that if they succeed in burning down seven houses they will bear a son, and that the occurrence of fires in villages is not uncommonly due to this superstition. This was corroborated from various other sources. Fires in the city of Delhi and in the Alwar State were attributed to this practice.§ A case occurred in the Jhilam district in which it was alleged that the accused, women of a family living in the neighbourhood, had set fire to the complainant's house in order to avert a calamity which it was predicted would occur owing to the inauspicious birth of a son. The Pandit, or astrologer, who had cast the horoscope of the child was implicated, but the accused, in default of sufficient evidence, were acquitted.‖ In 1896 a woman of the Chamár, or leather-dresser caste, at Sahárunpur, in the United Provinces of Agra and Oudh, was convicted of setting fire to the thatched hut of another Chamár. Before the flames could be extinguished, two men sleeping in the hut were burnt to death. The story of the accused was that she had been married for twelve years, that two children had been born to her, both of whom died in their infancy, and that, by the advice of a sorcerer, she had set fire to the hut in the hope of bearing more children.¶ According to Mr. H. A. Rose, Dakaut astrologers in the Panjab are in the habit of instigating childless women to burn down seven thatched roofs on seven successive Sundays, in order to secure male issue.**

Similar cases have been reported from the Central Provinces and the Deccan. Among the Kurmis of the Central Provinces, "if a woman is barren and has no "children, one of the remedies prescribed by the Sarodis, or wandering soothsayers, "is that she should set fire to somebody's house, going alone and at night to per-"form the deed. So long as some small part of the house is burnt it does not "matter if the fire be extinguished, but the woman should not give the alarm her-"self. . . . Some years ago at Bhándak, in Chánda, complaints were made of "houses being set on fire. The police officer sent to investigate found that other "small fires continued to occur. He searched the roofs of the houses, and in two "found little smouldering balls of rolled-up cloth. Knowing of the superstition, he "called all the childless married women of the place and admonished them severely,

* *Numbers*, xxxi, 19; *The Religion of the Semites*, 2nd ed. 431 *f.*

† *The Golden Bough*, 3rd ed., General Index, *s.v.* "Huts." *Trans. As. Soc. Japan*, VI, Pt. 3, pp. 265–90; *Kojiki*, 117 *f.*, 133 *f.*

‡ *Panjab Notes and Queries*, I, 18.

§ *Ibid.*, I, 83 *f.*

‖ *Ibid.*, I, 100.

¶ *Journ. Roy. Anthr. Inst.*, XXXII, 388.

** *Glossary of the Tribes and Castes of the Panjab and North-west Frontier Province*, II, 135, note. For the custom in general, see Dr. E. Sidney Hartland, *Primitive Paternity*, I, 81.

"and the fires stopped."* In the Sātāra district of the Bombay Presidency two women were tried for arson. An astrologer told them that they would bear children if they set fire to seven houses, and they followed his advice.†

It is interesting to note that the idea of hut-burning appears in one of the magical charms recorded in the *Atharvaveda*. In order to cure a woman of sterility the officiant Brāhman pours some clarified butter and oil into two tubs standing in a line of three huts, which have doors facing east and west. He then pours some more butter on a piece of lead placed on a leaf of the Palāsa tree (*butea frondosa*). He then washes the woman, who is dressed in a black garment, with the water and butter, and she, dropping her garment, makes her escape, while the Brāhman sets fire to the hut.‡

The question arises, why does the burning of one or seven huts, or part of the thatch, by a woman remove her sterility? One explanation has been suggested by the late Mr. R. V. Russell and Mr. J. T. Martin. Mr. Russell writes: "It is supposed "that the spirit of some insect which is burned will enter her (the woman who "burns the hut) womb and be born as a child. Perhaps she sets fire to someone "else's house so as to obtain the spirit of one of the family's dead children, which "may be supposed to have entered the insects dwelling in the house."§ Mr. Martin says: "An interesting corollary of the doctrine of re-birth of men and animals is to "be found in the belief that if a barren woman sets fire to the thatch of a house "at sunset or noon, some one of the multitude of insect life destroyed in this holo-"caust may perhaps be reincarnated in her womb. Not a few cases of arson were "formerly reported in the Chānda district to be due to this superstition."‖

This form of the belief in reincarnation reported from the Central Provinces does not seem to prevail in Northern India, nor am I aware that the habit of burning houses has been there attributed to this superstition. At the same time, all over India the idea is found that the spirit of a dead child may be re-born in a woman; and this seems to be the origin of the common practice of burying children under the eaves or threshold of the house, in the expectation that the spirit may enter the womb of the mother or of some other woman of the family. But the belief current in the Central Provinces hardly explains why the barren woman selects, not, as would be more natural, her own house, but that of a stranger or neighbour; and the intentional destruction of insect life, even for so worthy an object as the procurement of male offspring, would probably be obnoxious to most Hindus, particularly to those of the Jain or Vaishnava sects, who are extremely careful not to destroy the life of even the meanest creature.

I suggest that, at least in Northern India, where the theory that barrenness can be cured by the destruction of insect life does not appear to prevail, we must look in another direction for an explanation of the practice. Nor does the simple idea that the hut is burnt because it is infested account for the custom. As regards the custom quoted above from the *Atharvaveda*, it does not seem necessary to assume that the custom is identical with that now under consideration. The hut in this

* R. V. Russell: *Tribes and Castes of the Central Provinces*, IV, 32; *Ethnographic Survey Reports, Central Provinces*, IX, 69.

† *Punjab Notes and Queries*, II, 185.

‡ *Atharvaveda*, "Sacred Books of the East," XLII, 299.

§ Russell, *op. cit.*, IV, 32.

‖ *Census Report, Central Provinces*, 1911, I, 153. Sir James Frazer has collected numerous instances of the belief that the souls of the dead are believed to abide in insects, *The Golden Bough*, 3rd ed. "The Magic Art and the Evolution of Kings," I, 105; "Adonis, Attis, Osiris," 93 *f*; II, 162; "Spirits of the Corn and of the Wild," II, 280. For Indian examples, see W. Crooke, *Popular Religion and Folklore of Northern India*, 2nd ed., II, 267; Thurston, *Castes and Tribes of Southern India*, II, 111, 315; *Bombay Gazetteer*, XI, 62.

case was burnt by the officiating Brāhman, not by the woman; there seems to have been no pretence of secrecy in the rite, as is the case in the instance recorded in the Central Provinces. It is perhaps possible that the hut was burnt because it had been occupied by a woman who, as will appear later on, was held to be under tabu; or it may have been tabu because a magical rite was performed in it; or because the officiant and the woman who paid the expenses of the ceremony were desirous that the value of the magic might not be appropriated by some other woman who had not taken the trouble to arrange for such a performance or to pay the expenses of such a rite.

It is true that the practice of burning the huts in which girls on reaching maturity or expectant mothers are secluded is common. Of this the most reasonable explanation is that the mere presence of the patient makes the hut impure, and it is destroyed lest the impurity, which is very contagious, should be conveyed to others. In Madras, when a Paraiyan girl attains maturity she is kept for sixteen days in a hut, which is guarded at night by her relatives. When the period of impurity is over the hut is burned down, and the earthen pots used by the girl are broken into small pieces, as it is supposed that if rain water collects in any of them the girl will be childless.* When an Oddan girl, in the Cochin State, comes of age she is confined in a special hut, in which a piece of iron, *margosa* (*melia azadirachta*) leaves, sticks of *strychnos* nux vomica, and those of the *arka* plant (*calotropis gigantea*), all potent in repelling evil spirits, are placed. At the end of the period of pollution the hut is burnt down.† Among the Pallans of Madras the hut is made of the leaves and branches of special trees, and it is burnt down on the seventh day.‡ In the case of a Paliyan girl, she is obliged to live for a fortnight in a temporary hut, which, when she is pure, she burns down; and when a Gangadikāra Okkiliyan girl reaches puberty she occupies a hut made of special leaves and branches; this is broken up and rebuilt on the third, fifth, and seventh days of her occupancy.§

These cases of hut-burning, except so far as they illustrate one form of tabu, do not help us to explain the custom as a means of removing sterility. It is perhaps with reference to another side of tabu that we may arrive at a solution of the problem. Among the animistic races of India barrenness is generally regarded as the result of the agency of malignant spirits or demons; the woman does not bear children because she is beset by some evil spirit.

The use of fire as a method of purifying strangers who are under tabu is familiar.‖ The same method is used in India in the case of the readmission to caste privileges of persons who have been ostracised on account of some breach of social regulations, and are for the time under tabu. Thus, in the Baroda State "there is a curious ordeal for defaulters among the Kukanās [a forest tribe]. If "any Kukanā has eaten forbidden food or has committed adultery, he is made to "pass through seven grass pits. He first enters the first pit; it is ignited, and the "man goes to the second, where the same process is repeated, until he passes "through all seven. After this he is made to take some dips in water. This "over, the headman of the village asks him whether he is purified. He replies in "the affirmative. This also is done seven times. After this he is made to swear "by his god, and to promise not to do such a thing again in future."¶ In some

* E. Thurston: *Castes and Tribes of Southern India*, VI, 167.

† L. Anantha Krishna Iyer: *Tribes and Castes of Cochin*, II, 391.

‡ Thurston, *op. cit.*, V, 479. § Thurston, *op. cit.*, VII, 276; V, 440.

‖ Sir James Frazer: *The Golden Bough*, 3rd ed., "Taboo and the Perils of the Soul," 108 *f.*

¶ *Census Report, Baroda State*, 1901, I, 365.

cases the ceremony is so far modified that the offender is not actually exposed to risk of life. Thus, in Madras, a Koravā who has been excommunicated on account of an intrigue with a widow has to pass through a shed made of millet stalks, which are set on fire as he goes through it.* If a Koyā girl consorts with a man of a caste lower than her own, the pair are absolved from sin by having their tongues branded with a golden needle, and by being made to pass under seven arches made of palmyra leaves, which are afterwards set on fire.† Among the Bakulās of South Kānara, when a man is excommunicated he is required to "burn seven villages" in order to secure readmission to caste privileges. Seven small leaf booths are built, and bundles of grass are piled round them. The culprit has to pass through these booths one after the other, and as he does so the headman sets fire to the grass.‡ A still milder form of purification is also found in the Kānara district. When a widow, or a woman living apart from her husband, bears an illegitimate child, she sends the news to the Bīrā, the medicine-man, or tribal priest. He makes her sit before a copper pot filled with native spirits. Then he lights a lamp, sets it in the middle of the pot, plucks a couple of hairs from the front locks of the woman's head, and laying them in a toy hut made of straw and sticks, sets the whole on fire, and then announces that the woman is pure.§ The classical instance of the chastity fire ordeal is that of Sītā, consort of the hero-god Rāma, who passed through the fire and thus established her purity.‖ Among the Bhamptas, a criminal tribe in the Bombay Presidency, the culprits charged with adultery are required to pick a copper coin or some other small object from a vessel filled with boiling oil.¶

In the more stringent forms of this fire rite the culprit was probably burnt to death, or at least ran considerable danger, as in the case of the man at Dahomey who killed a fetish snake.** The hut in which he was confined was set on fire, and if he managed to escape he was obliged to run the gauntlet until he reached water, and purified himself by plunging into it. In some of the Indian cases the offender runs considerable risk. Thus, when a Kaikāḍī woman commits fornication with a man of another caste, she may be restored to her original status by having her head shaved at a river, tank, or well, and by having her tongue branded with a hot ring or some other article of gold. Then she is seated under a wooden shed provided with two doors; she enters by one door and sits inside while the hut is set on fire. She must remain seated till the whole structure is alight, and then she is allowed to make her escape if she is able to do so. Finally, a small boy of the caste is induced to eat food from her hand, and she is then admitted to caste privileges.†† Among the Korvis of the Belgaum district, if a woman is convicted of adultery or some other serious offence, she is expelled from her caste, and she is not readmitted until she goes through the following rite: Three stalks of millet are fixed in the ground with their tops touching. The accused woman is forced to stand under them, and then they are set on fire. She is then branded with a piece of hot gold, and thus becomes purified.‡‡

When a Koragā woman is convicted of adultery with a man of a caste lower

* Thurston, *op. cit.*, III, 405 *f.*

† Thurston, *op. cit.*; F. B. Hemingway, *Vizagapatam District*, I, 65; Thurston, *op. cit.*, IV, 51.

‡ J. Garrick: *Canara Kanara District Manual*, I, 175; Thurston, *op. cit.*, III, 457.

§ *Bombay Gazetteer*, XV, Part I, 215.

‖ *The Rāmāyan of Vālmīki*, trans. R. T. H. Griffith, ed. 1895, p. 506 *ff.*

¶ M. Kennedy, *Notes on the Criminal Classes in the Bombay Presidency*, 21.

** Sir James Frazer, *op. cit.*, "Taboo and the Perils of the Soul," 322; "Totemism and Exogamy," II, 585 *f.*

†† Russell, *op. cit.*, III, 301.

‡‡ *Bombay Gazetteer*, XXI, 172.

than that of her own he must marry her. First, he must build a miniature hut and place the woman inside. The hut is set on fire, and the woman escapes as best she can to another place, where she undergoes the same purification until she has been burnt out seven times. She is then considered to be an honest woman and fit to be married. According to another account, a row of seven huts is built on the bank of a river; they are set on fire, and the culprit is compelled to run over the burning wood and ashes.* Among the Bakudāru and Butadāru of Mysore, if a woman is seduced, she is taken to wife by her paramour, even if he chances to belong to a different caste. In order to purify her for marriage, her lover builds a small hut of straw, puts the woman inside it, and sets it on fire. She makes her escape to another village, where the same ceremony is performed, till she has been burnt out eight (? seven) times.†

A similar form of purification is enforced by those castes which admit strangers to their community. Among the Uru Ods of Bombay a stranger wishing to join the tribe is shaved, and then seated in a small hut, which is set on fire, when the neophyte makes a hurried escape.‡ The Holeyas of Mysore admit into their community members of higher castes who have been excommunicated. Such recruits are purified by shaving of the head in the case of males, branding the tongue with a piece of heated gold, drinking cow's urine, and bathing in water drawn in sacred vessels. They are then made to pass successively through seven huts, which are erected, and burnt down after the candidates have passed through them.§

From these examples it may be gathered that a person under taboo, or one who has incurred some special form of pollution, is compelled to submit to a rite which consists in passing through seven huts made of straw or branches which are set on fire, the passage involving more or less physical danger; and that in some cases the ordeal has been so watered down that the risk to life or limb is merely nominal. This, I venture to suggest, is the origin of the rite to avert sterility which we have been considering. The woman who is barren is supposed to be under a curse, or to be beset by some evil spirit. She is out of harmony with her caste or tribal gods; she needs purification before she can again secure the boon of children. Probably in the more primitive form of the rite she did actually, with more or less danger to life or limb, pass through seven burning huts. The severity of the rite has now been reduced, and all that remains is the burning down of the houses of seven neighbours, or of pieces of the thatch taken from them. She thus gains purification without any danger except from British law. It may be added that in Vedic times the fire or smoke of a burning thatch was considered to be efficacious in dispelling the influence of evil spirits. In the *Atharvaveda*, to cure pain in the heart, dropsy, and jaundice, all spirit-sent diseases, a charm is prescribed, and water, drawn from a stream along, not against, its current, is warmed with burning grass from a thatch and sprinkled over the patient.‖

There are numerous parallels outside India to the rites discussed in this paper. According to Professor Westermarck, in Morocco, on Midsummer Eve they burn the tent of a widow who has never given birth to a child, in order to rid the settlement of ill-luck—probably, in particular, to check sterility; the Zemmur tribe burn the tent of someone who was killed in war during a festival; if there be no such person in the encampment, the schoolmaster's tent is burnt instead; the Beni Ahsin make

* Thurston, *op. cit.*, III, 436.

† F. Buchanan: *A Journey from Madras through the Countries of Mysore, Canara, and Malabar*, III, 107.

‡ *Ethnographic Survey, Bombay Reports*, Monograph 189, p. 2.

§ *Ethnographic Survey, Mysore*, Part ii, "The Hoyela Caste," p. 15.

‖ *Atharvaveda*, "Sacred Books of the East," XLII, 471.

a little tent of straw at Midsummer, set it on fire, and let it float down the river; the Salii burn a straw hut at the river which flows past their town."

One of the best parallels is the ceremony at the Greek festival of Apollo, known as the Stepteria, a cathartic or purificatory feast, at which a boy specially selected, with his companions, under the escort of the Oleiai or sacred women, and persons bearing torches, was led in silence to a building in the form of a palace, which represented the abode of Python, the sacred serpent. This they set on fire, and overturned the table standing within it, and then without looking back they fled through the door of the temple. Then the boy leader feigned to go into exile, or even into servitude. After this all were purified, crowned with sacred laurel, and they returned to share in a sacramental meal. The object of the ceremony was to purify Apollo from the sin of slaying the sacred snake.†

There are some other Indian customs of hut-burning in ritual which it is not easy to classify or explain. Robert Southey quotes the following account‡: "On "the night of the new moon, in the month of October, the princes are obliged to "set fire to certain houses, in honour of a victory obtained by their gods on earth. "The choice of the houses is left to the Brahmins, who thus safely gratify their "own enmities. The assault is made suddenly, the houses are set fire to on all "sides, and consumed with all their contents and all their inhabitants, and this "they call the holy sacrifice of blood and fire." The story probably comes from Southern India, but I have been unable to trace any other account of the rite.

During the worship of the village goddesses in the district of Dhārwār, in the Deccan, the images are placed in a grass hut, known as "Mātangi's Cottage," Mātangi, "the young woman," being the title of the goddess more commonly known as Bhadrā Kāli or Māriyamman.§ When the images are removed the hut is burnt down, possibly because, owing to its occupation by the divinities, it is held to be *sacer* or *tabu*.‖ In the same way, the Mālās of Madras erect at their ceremonies a temple made of straw, which they destroy after the rites are finished, each man taking a straw from the burning building which he treasures as a sacred relic.¶ In the Central Provinces, "when cholera breaks out, everyone retires after sunset, and "the Baigās [priests of the Gonds and other forest tribes] parade the streets, taking "from the roof of each hut a straw, which are burnt, with an offering of rice, "clarified butter, and turmeric, at some shrine to the east of the village site." Possibly this may be intended to mark the association of every household in the rites intended to propitiate the dreaded Mother goddesses who control epidemic diseases. The Sundis of the Central Provinces observe the festival of the Pitri-paksha, the fortnight of the month Bhādon (August-September) consecrated to the worship of the Manes, as follows: A human figure made of the sacred *kusa* grass (*poa cynosuroides*) is placed under a miniature grass hut; a lamp is kept burning before it for ten days; every day fresh twigs used for cleaning the teeth are laid before the image, and it is supplied with fried rice in the morning and a meal of

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* *Folk-lore*, XVI, 80 *ff*; *Ceremonies and Beliefs connected with Agriculture*, 68 *f*; Sir James Frazer: *The Golden Bough*, 3rd ed., "Baldur the Beautiful," I, 215 *f*.

† L. R. Farnell: *Cults of the Greek States*, IV, 293 *ff*; A. B. Cook: *Folk-lore*, XV, 462 *ff*; Miss J. E. Harrison: *Prolegomena to the Study of Greek Religion*, 113 *f*; *id.*, *Themis*, 416 *ff*; *Journal Hellenic Society*, XIX, 228; J. Hastings: *Encyclopædia of Religion and Ethics*, V, 861; Sir James Frazer: *Pausanias*, III, 83 *ff*.

‡ *Commonplace Book*, 2nd Ser., p. 434, quoting *Lucian*, I, 189, a reference which has not been verified.

§ *Madras Manual of Administration*, III, 465.

‖ *Bombay Gazetteer*, XXII, 511. ¶ Thurston, *op. cit.*, IV, 346.

** C. Grant: *Gazetter of the Central Provinces*, Introd. CXVII.

rice, pulse, and vegetables in the evening. On the tenth day the priest comes, bathes the figure seven times, places boiled rice before it for its final meal, and then, after the recital of sacred texts, sets fire to hut, and presumably to the figure within it.* Here the image may be assumed to represent the collective recently deceased ancestors of the tribe, who are duly fed during the period of the ceremony. The image and the hut containing it are burnt at the close of the festival, apparently because the spirits of those recently dead are now assumed to have gained entrance to their final resting-place with the general body of the Pitri or ancestors of the tribe. In Madras, when a Nāttukottai Chetty youth performs the rite known as Suppida before his marriage, he goes to a temple of Ganesa, the deity of good luck who favours all enterprises, whirls round his head a bag filled with burning charcoal tied to a long string, apparently a prophylactic against evil spirits. Then he burns a booth set up in front of the temple, the ashes of which are used to make a mark on his forehead.† By this rite it would appear that he enters into communion with the god who, it is hoped, will make his marriage prosperous.

It will have been noticed that the number seven plays an important part in these ceremonies. Seven, in Hindu belief, is a perfect number, and there are many instances of its use in Hindu cults. In North India this is the number of the handfuls of wheat and sugar which are thrown into a river to appease the flood demon; in a charm for causing rain to cease, seven pieces of granite, seven grains of mustard, seven bits of goat-dung are placed under the house eaves; they represent demons hostile to Indra, god of rain, and as they dry up the rain is supposed to lessen.‡ In the older mythology there are seven Mātris or Mother goddesses; seven Rishis, Adityas, and Dānavas; seven horses of the sun god. In the same way, seven was the sacred number of Apollo.§ Among the Semites, special sanctity was attached to groups of seven wells, and, in particular, in the taking of oaths.‖

In the present case it has been plausibly suggested by Mr. R. E. Enthoven that the rite of passing through seven burning huts may be "a rapid representation of "seven existences, the outcaste regaining his, or her, status, after seven generations "have passed without further transgression. The parallel suggested is the law of "Manu, that seven generations are necessary to efface a lapse from the law of "endogamous marriage."¶

On the whole, I venture to suggest that the explanation of the rite to check sterility is not based upon the theory of reincarnation; but that the ceremony is a form of ordeal, or a means of purgation or purification, by which the childless woman hopes to free herself from the evil influences which cause barrenness, and to prepare herself for conception in the normal way.

W. CROOKE.

Japan: Folklore. Hildburgh.

Note on the Gourd as an Amulet in Japan. *By W. L. Hildburgh.* 12

Among the multitude of forms assumed by the Japanese netsuke, that of the bottle-gourd is unusually prominent. It is peculiarly adapted to serve for that of a netsuke, because its constricted portion gives a place for the cord, while its smooth and rounded surface permits the netsuke to pass easily under the girdle, thus facilitating the putting on or putting off of the article for whose attachment

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* Russell, *op. cit.*, IV, 556. † Thurston, *op. cit.*, V, 264.

‡ W. Crooke: *Popular Religion and Folklore of Northern India*, 2nd ed., I, 48, 77, 125.

§ Sir James Frazer: *Pausanias*, V, 245.

‖ W. Robertson Smith: *Religion of the Semites*, 2nd ed., 181 *f*; *Encyclopædia Biblica*, III, 3436 *f*, 3451.

¶ Quoted by Thurston, *op. cit.*, II, 346.

the netsuke is used. But in the belief of many Japanese there is much more in favour of a gourd-shaped netsuke than the mere convenience of its form, for to such a netsuke—as to comparatively very few of the vast number of netsukes of other forms which have been made—they attribute a certain measure of magical power. An actual gourd, of a convenient size, either with its natural surface or ornamented with lacquer, is sometimes used as a netsuke, but more often a copy of a gourd, in bone, ivory, wood (plain or lacquered), metal, glass (either solid or hollow and containing a liquid), jade, agate, soapstone, or some other material, is employed. Children use the gourd-form very commonly, often as a netsuke to hold the little bags (*o-mamori-kinchaku*) containing their paper charms, and sometimes as an ornament sewn upon or hung from these bags; they use it, too, as the basis of certain of the *maigo-fuda* (the tickets or labels bearing the name and address of the parents, and perhaps some ornamentation intended to secure supernatural protection for the small wearer), to which, among other forms, that of a longitudinal section of a bottle-gourd is given.* Elderly people, also, often wear small gourds or effigies of gourds, which serve as their netsukes. In the cases of both these and the children the main purpose of the gourd (or its likeness) is very often said, at present, to be the keeping of its bearer from stumbling and from injury by falling.

The belief in the bottle-gourd as an amulet against stumbling or injury by falling, curious as it seems, is by no means a new one, for, in a book published a little over a century ago, the bottle-gourd is mentioned as having been carried in the Gencroku period (end of the seventeenth century) as a charm against stumbling.† Later, a small imprint, representing a bottle-gourd, came to be stamped upon *geta* (wooden pattens), so that the wearers of these *geta* might be kept from stumbling, a marking which, I believe, is still sometimes followed. The gourd is far from being the only amulet to which the power of preserving its bearer from falling is ascribed by the Japanese; a similar power is very often attributed at the present time to the little bell worn at the waist by Japanese infants, to certain stones (such as rock-crystal)‡, to certain amulets of religious origin, and to some other things. This multiplicity of magical preservatives against falling suggests that they are respectively indications of a phase in the decay of more primitive beliefs, for although stumbling is a danger to which children and old people (who are looked upon as entering their second childhood when they reach the age of sixty, and in consequence often wear, like children, red undergarments, red-lined clothes, or red caps§) are particularly exposed, it seems hardly likely that so many amulets which are not directly associable (according to the general principles underlying the selecting of objects as amulets) with falling should have been especially devised against falling; that is, we seem to have a good reason for guessing that the carrying of certain articles by the Japanese as preservatives against stumbling resembles the present carrying, by educated Europeans, of certain things (formerly used as protections against the effect of sorcery or of "evil eye," or against an illness) for mere "good luck." That this is indeed so in the case of the little bell

* Some children's amulets of several kinds, actual gourds or based on gourd forms, are shown on Pl. IV of "Japanese Household Magic," in *Trans. Japan Soc.* (London), Vol. VIII.

† *The Chrysanthemum* (Magazine), Yokohama, 1881, p. 32, quoting the *Kotto Shiu*.

‡ In China (as, for example, at Foochow), ornaments cut from "precious stones" (jade is evidently referred to, and perhaps rock-crystal and coral as well) "are often worn suspended on "one side of the persons of adults. Some seem to believe that such a one helps them to keep their "balance, and acts as a kind of preventive of slipping or falling down."—J. Doolittle, *Social Life of the Chinese*, New York, 1867, Vol. II, p. 324.

§ Jukichi Inouye: *Home Life in Tokyo*, Tōkyō, 1910, p. 236.

is clearly shown by certain evidence"; it is further shown in the case of rock-crystal, which I have recorded as used as a protection against falling, and which has been reported† as a protection against the works of evil supernatural beings; and that it is also so in the cases of some of the other amulets now used against stumbling can, I think, be shown as well. The original (or at least an early) purpose of the wearing of the little bell was the protection of its bearer from the attacks of evilly disposed supernatural beings seeking weak or helpless persons whom they could injure. We have reason to suspect, therefore, that the bottle-gourd, like a number of other amuletic objects used to-day in Japan for more or less specific, but minor, purposes, was formerly employed as a thing antipathetic to evil spectral beings of many (and perhaps all) kinds, and that its present employment "against stumbling" or "injury by falling" is no more than a relic of a much wider sphere of application. The use of the gourd by children seems to confirm a suspicion of this kind, because a decaying belief in a magical operation of more or less general application often finds its last expressions in matters connected with children. And the use of the gourd by elderly people seems further confirmation, because finding red—a colour which is used in China and Japan as a protection against the attacks of evil supernatural beings—still worn by old people just as it is worn by children, we may assume as probable that a reason similar to that underlying the magical employment of red underlies the magical employment of the bottle-gourd, which is likewise worn by the aged and the very young.

That the bottle-gourd was formerly primarily an amulet generally anti-spectral in character would seem to be shown by the fact that in China (where the child's small bell, now commonly regarded in Japan as little or no more than a preservative against injury from falls, is still used to keep the child from harm due to evil supernatural beings), the bottle-gourd is associated both in a general way and in several special ways with the protection of persons from spectral attacks. At Foochow "The gourd-shell, or a painting of the gourd on wood or paper, "or a small wooden gourd, or a paper cut in shape like a perpendicular section of "a gourd, or a paper lantern made in shape of a gourd, is in frequent use . . . "as a charm to dissipate or ward off pernicious influences. Children often wear "about their persons a representation or picture of the gourd. The shell of this "vegetable is sometimes hung up near the place where the children who have not "yet had the small-pox sleep during the last night of the year. This custom is "explained by the Chinese by saying that a certain god of the small-pox and "measles will '*empty*' the small-pox into the gourd-shell, and not into these "children, if he should observe one ready."‡ It is worth observing, in connexion with these Foochow practices, that the gourd-shell, and the small wooden gourd, are duplicated by Japanese amulets, while the paper cut in shape like a section of a gourd is paralleled very closely by the gourd-shaped *moigo-fuda*; and, further, that the "god of the small-pox" referred to is an evil-working demon who has been deified by the Chinese—as, sometimes in a more or less modified form, by other Asian peoples—because of his power. At Amoy, gourd-shaped objects made from wood cut on the fifth day of the fifth month, a date peculiarly propitious in matters connected with protection against evil supernatural beings, are worn on the breast as

* *Cf.* "Japanese Household Magic," p. 146. N. B. Dennys, in *The Folk-Lore of China*, Hongkong, 1876, p. 88, says that the "most common of all [amulets] are the little bells worn by the "Chinese child of every degree in the Southernmost provinces, and, more sparingly, used in the "North also."

† F. Hilman, in "Volksthümliche Vorstellungen in Japan," in *Mittheilungen der deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens*, Vol. VI, p. 334.

‡ Doolittle, *op. cit.*, Vol. II, pp. 315, 316.

amulets, together with small swords—potent protections against such beings in general—made of wood of the same kind.* It is interesting to observe, further, that the Malays, who have many beliefs, whether of Malayan or of Chinese origin, resembling those of the Japanese, include the skin of a bottle-gourd among the materials used for fumigating an infant which cries and will not take its food,† because the symptoms mentioned are among those attributed by them to the attacks of evil supernatural beings.

That injury by falling was, like many other evils, formerly looked upon as one of the effects of the actions of such beings is indicated by various Japanese beliefs or practices. The same idea comes out clearly in a record concerning the Koreans, who have many beliefs closely resembling, or at least founded on the same conceptions as, Japanese beliefs—persons out on a hillside cutting wood offer a little of their food, before partaking of it, to the spirit of the place where they are, fearing that if they fail to do so "they will be punished by a severe fall or cut, or some other accident."‡

We may now, having seen that the bottle-gourd or its likeness probably served in Japan as an amulet against the works of evil supernatural beings in general, rather than against any one specified evil, seek a satisfactory reason why it should have been selected as such an amulet. The wide distribution of the belief in the preservative virtues of the bottle-gourd indicates that the belief is probably an old one, while the present occurrence of the belief, in one form or another, in China, in Japan, and among the Malays, indicates that it probably has elements fitting in with fundamental conceptions of the several peoples among whom it is found. I think that we may trace the reason we seek in, or at least as closely related to, the employment of gourds as rattles. The seeds within a dried gourd, striking against the shell when the gourd is shaken, make a sound which has caused gourds to be selected as rattles, often for ceremonial purposes, in various parts of the world. It seems possible, therefore, that the sound given forth by the gourd may, in itself and directly, have sufficed to cause the selection of the gourd as an amulet; the fact that the sound may at times, in the case of small gourds, be almost inaudible, is not valid as an argument against this, for it is *quality* which, everywhere, is generally regarded as of most service in the warfare against the unseen, not *quantity*. Among the amuletic bells of Japanese or Chinese children there are some which produce hardly so much sound as a small gourd; perhaps an extreme example of these—almost equivalent to the mere effigies of gourds—is the bell, for a Japanese infant, made from a piece of the antler of a sacred deer (a material in itself deemed preservative against evil),§ which can be barely heard when shaken. It seems possible, on the other hand, that to the gourd used as a rattle there may have anciently been attributed special virtues in connection with the driving away or the control of evil supernatural beings during magical or during religious ceremonies, and that because of this the gourd was looked upon as a magical instrument, and came thus to be applied as a personal amulet. That a gourd could serve as a child's toy as well as for the child's protection would have provided an additional reason

* J. J. M. de Groot: *Les Fêtes Annuelles à Émoui (Amoy)*, Paris, 1886, p. 328. The use of the gourd here is explained (p. 329) by de Groot by the Chinese apothecaries' employment of gourd-shells or of pottery gourds as containers for their medicinal materials, and by the gourd's symbolising a horn of plenty among the Chinese.

† W. W. Skeat: *Malay Magic*, London, 1900, p. 338. Lightning-struck wood, the belief in which as anti-demoniacal is widely extended, is another material used for such fumigations by the Malays.

‡ Mrs. Bishop: *Korea and Her Neighbours*, London, 1898, Vol. II, p. 244.

§ Tiny images of gourds, as well as other objects, are made of this material.

for its association with childhood; a number of examples of anti-demoniacal objects which have become common children's toys in Japan could be cited in support of this almost obvious conclusion. The general form of the little amuletic bells of Chinese and Japanese children, which is evidently a traditional one, lends support to the idea that gourds were anciently used as amulets because they acted as rattles, for those bells consist of shells of metal, almost completely closed, containing loose strikers; that is, they are not open-mouthed bells with clappers, but are merely small metallic rattles, and not improbably derived more or less directly from rattles of vegetable origin.*

Again, it seems possible that the Far Eastern employment of the gourd as an amulet may have originated in the gourd's employment as a container for substances to which preservative or other virtues were attributed.† Primitive peoples very often carry upon their persons seeds, powders, or other things in finely divided forms, with protective or curative intent, most often keeping those things in little sacks, but occasionally using small gourds for the purpose. If the Chinese anciently followed a practice of this kind, a natural and logical development from it, and one which would parallel the developments in the case of certain other amuletic objects among the Chinese, would have been the use of empty gourds (with their mouths kept closed, so that spectral beings, who are generally looked upon as being in many respects rather stupid, could not know the contents) and of effigies of gourds.

The gourd is mentioned in the *norito* of a certain fire-preventing service as one of four children to whom Izanami gave birth in order that they might counteract the evil works of her earlier child, Fire,‡ but its introduction in this connection seems, if we may take the nature of its companions as a criterion, to be due mainly, if not entirely, to its value as a vessel for holding water. Snake-gourds occur in connection with certain Japanese curative or preservative *majinai*, but in those *majinai* of which I know their applications seem to be based on conceptions other than those underlying the magical applications of the bottle-gourd which have been discussed above.

W. L. HILDBURGH.

REVIEWS.

India: Naga Language. **Pettigrew.**

Tangkhul Naga Grammar and Dictionary (Ukhrul Dialect), with Illustrative Sentences. By the Rev. W. Pettigrew, American Baptist Mission. Shillong. 1918. **13**

This book is published by the Assam Government. Persons with even a moderate knowledge of both English and Tangkhul Naga are few, so that we ought, no doubt, to be grateful for such a work; yet one cannot help wishing that the author had been better qualified for his task.

The explanations are sometimes ungrammatical, and often obscure. What, for instance, is the unlucky learner to make of the following on page 3, under the head "Pronunciation"?

"Words or suffixes ending in *u* or *ui* interchange with *o*, as *rō-lo* for *rō-lu* (come), and in modified verbs, such as *yām-thā-nu* (walked away), when changed into a verbal adjective, is changed into *yām-ka-tho*."

The preface refers to Sir George Grierson's Linguistic Survey of India, which has already dealt with the language. It is to be regretted that the author has not benefited by Sir George's explanation of the structure of the languages in this

* Of this type of bell, Holmes, referring to certain ancient Central American bells, says (*Bull. 3, Bur-Amer. Eth.*, p. 24) that "The form originated, no doubt, in the rattle, at first a nut-shell or gourd."

† *Cf. footnote* *, p. 28, *supra*.

‡ W. G. Aston: *Shinto*, p. 316.

group. If he had he would not have written of cases and numbers, voices and moods and tenses, in treating of a language which is innocent of all these things. He does not, indeed, go so far as the author of a grammar, quite recently used in Government schools, who invented a paulo-post-perfect in Burmese; but he presents us with eight cases (he might as well have made eighty) and a potential mood formed with a verbal suffix meaning "to be responsible."

Numerous sentences are given in Naga and English, and would be very useful if the grammar were better dealt with. In a language of this group a sentence is largely made up of particles. Many of these have no equivalent in English, and the beginner finds it very difficult to ascertain their meaning and use unless these are explained. The more examples there are the better, but examples alone are insufficient, especially if no indication is given as to the meaning of other words in the sentence. To look up the words in the "dictionary" at the end of the book is more likely to waste the learner's time than to help him, as practically all particles are excluded from it. No doubt it is difficult to deal with these in a vocabulary, because few of them are capable of being translated into a single English word; but it is a difficulty which ought to be faced. It may be met by writing notes on them, either separate or appended to sentences, and referring the user of the vocabulary to the page on which the notes may be found. On the other hand, the Naga words (or made-up expressions) for stagmoss, ductile, regimen, calendar, field-glass, impetigo, patriot (all in the Naga-English vocabulary) and scores of others might well have been omitted.

Keys to pronunciation prepared without a knowledge of phonetics are bound to be defective, but it is something new to find a dead language resorted to for a key-word. On page 2 we have "*ee* as *ee* in *e-gee* (Latin)."

On page 4 appears the remark: "I have made no attempt to mark tones or "stresses, as these differences can only be properly learned by ear." As applied to tones which differentiate the meaning of words this statement is the reverse of the truth. Such tones *must* be marked, if the student is not to be misled from the beginning, and made to form habits of mispronunciation which it will be difficult for him to eradicate later. It is probably not too much to say that, though a European with a good ear may learn to speak these languages correctly in other respects without visual assistance, he will never learn the tones unless he sees the words in writing and the tones marked.* Unless this is done he cannot distinguish the tones which are essential from those which are accidental.

It is high time that all writers on unwritten languages abandoned the practice of using miscellaneous fancy spellings, which represent no definite sounds, and adopted the alphabet of the International Phonetic Association, the only one in wide use in this country which can be said to rest on a scientific basis. The alphabet is used, sometimes with modifications, practically in all our text-books of phonetics. The knowledge of phonetics is spreading daily, and the younger men who go out to the East are likely in the near future to be familiar with the alphabet. "For the past "ten years systematic instruction in phonetics . . . has formed part of the course "to be followed by all Scottish teachers, whether Primary or Secondary. . . . "Instruction in phonetics is now given by regular members of the staff at most "English training-colleges." The quotation is from page 24 of the recently published report of the Modern Languages Committee appointed by the Prime Minister, which recommends that "an adequate training in and mastery of phonetics" should be

* Tone may be defined as pitch or variation of pitch. The tones are best marked by short lines or dashes placed before or after the syllable. Thus a high level line would indicate a high even tone; a slanting line, beginning high and ending low, a falling tone; and so on. The marks can further be explained by means of musical notation, though this method has the drawback of being too precise, the range of pitch in the spoken word being variable and merely relative.

guaranteed by every normal certificate (page 52); that "phonetics form part of the "training of all entrants to the public service whose duty will lie in foreign "countries" (page 64); and that "a thorough knowledge of the science should form "part of the special training of selected candidates for the Indian Civil Service" (page 13). It may be added that the Board of Study for the Preparation of Missionaries has for some years held summer courses including phonetics; and that lectures in phonetics and practical classes are now held throughout the year at the new School of Oriental Studies in Finsbury Circus. Although, therefore, comparatively few of the older generation are familiar with the alphabet, and though it is constantly being developed, improved, and extended, it is likely soon to be, in its main features at least, as universally recognised as our system of notation in music; and writers on languages will no more think of using letters (including ordinary Roman letters with diacritical marks) invented by themselves, or of giving their own values to letters, than a musician would now publish a piece of music with a notation of his own, or one in which different values from the ordinary are given to the notes and other symbols.

One of the international symbols, ə, has been used in this book, though inconsistently and with the erroneous statement (on page 2) that it has been adopted by the Royal Asiatic Society. The alphabet was recommended by me in a paper for the Society's *Journal* ("The Use of the Roman Character for Oriental Languages," July 1912), but officially the Society has so far only devoted its attention to the transliteration of written languages. (Transliteration has nothing to do with the representation of sounds. It is merely a convention by which certain characters of the Nagari and other alphabets are represented by certain other characters, with or without diacritical marks.) The application of the system to Indian languages was dealt with in *The Asiatic Quarterly Review* for January, 1912, and in *The Indiaman* of the 26th July, 1917. A key to the system, price 6*d.*, is obtainable from Mr. Daniel Jones, Reader in Phonetics at London University College. The paper for the Royal Asiatic Society, mentioned above, may also be obtained from him, price 1*s.* 6*d.* Mr. Daniel Jones has himself dealt with the subject in an article, entitled "The Value of Phonetics to the Language Student," in *The International Review of Missions* for April, 1918.

A warning is here necessary. It would be better that the International alphabet should not be used at all than that it should be used by a person altogether ignorant of phonetics. But in these days no such person should attempt to reduce an unwritten language to writing. In Europe he has no excuse, for he can easily remove the reproach of ignorance from himself. In India facilities for the study of phonetics hardly exist, but it is hoped that this will not long continue to be the case.

R. GRANT BROWN.

Taxila. Marshall.

A Guide to Taxila. By Sir John Marshall, Director-General of Archæology in India. Calcutta: Superintendent Government Printing. 1918. Price 4*s.* 6*d.* **14**

There is no ancient site in India the scientific excavation of which has been awaited with greater interest than that of the great city of Taxila, which lies 20 miles north-west of Rawalpindi, in the Panjab. Its name in Sanskrit, Takkasilā or Takhasilā, meaning probably "the city of cut stone," marks its importance. It is mentioned in the Mahābhārata; an inscription in Aramaic characters of the fourth or fifth century B.C., the only Aramaic record yet found in India, indicates the influence of Persia. It was captured by Alexander the Great in 326 B.C.; it was of much importance under the Mauryan empire, Bactrian Greeks, Scythians, and Parthians, and it was finally destroyed during the invasion of the White Huns

after 455 A.D. Much damage was done by ignorant explorers, but most of the city has now been carefully excavated under Sir John Marshall's supervision, who gives a valuable account of its history and topography. Among the most interesting discoveries were a steatite vessel with a silver vase inside, and in the vase an inscribed scroll and a small gold casket containing some minute bone relics, the inscription being dated about 78 A.D.; the remains of a palace bearing a considerable resemblance to those of Assyria; a representation of the double-headed eagle which first occurs in Hittite art; an Aramaic inscription of the fourth century B.C.; a head of Dionysus in silver repoussé; some fine jewellery; a temple much resembling the classical temples of Greece; and another temple, apparently Zoroastrian. W. CROOKE.

Lau Islands: Folklore. St. Johnston. 15

The Lau Islands and their Fairy Tales and Folk-Lore. By T. R. St. Johnston. Pp. 145. London: The Times Book Company, 1918.

The culture of Fiji, arising out of a mixture of Melanesian and Polynesian elements, has a special character very different from either of its constituents. The tales recorded by Mr. St. Johnston, from the more Polynesian islands of the Lau Archipelago, show this special character clearly. Most of them deal with the doings of Fijian gods and with their relations with the human inhabitants of Fiji, and reveal a concept of the higher powers distinctly different from that of Polynesia, while the chief link with Melanesia is in the account of magic and in the incidental appearance of a supernatural reducer of young men, and beliefs concerning the dead, which are frequent themes of Melanesian mythology.

The tales are recorded in free translation and in a literary form intended to appeal to popular interest. Mr. St. Johnston disclaims the *rôle* of the ethnologist, but the stories he relates not only give a vivid picture of Lauan belief, but also record incidentally many facts of great anthropological interest. Thus, we are told of the ancient practice of burying chiefs in great canoes, which were then dragged to almost inaccessible caves, and the chapter on magic relates several interesting features, such as the necessity for keeping away from the sea and the constant recurrence of the number four in the magical ritual. Mr. St. Johnston tells us that the tales now recorded are selected from a big book of notes. It is to be hoped that we may have other selections from this note-book, and the anthropologist will not complain if the facts are given as nearly as possible in the native dress. The free translation into literary English is apt to disguise many touches of native thought of great value to the student, whether this value be to assist exactness in comparison with other localities or to reveal with fidelity the concepts underlying the manifold social activities of the people. W. H. R. RIVERS.

ANTHROPOLOGICAL NOTE.

Accessions to the Library of the Royal Anthropological Institute. 16

(Donor indicated in parentheses.)

The Turks of Central Asia in History and at the Present Day: An Ethnological Inquiry into the Pan-Turanian Problem, and Bibliographical Material relating to the Early Turks and the Present Turks of Central Asia. By M. A. Czaplicka. 9¼ × 6. 234 pp. and Map. Clarendon Press. 15s. net. (The Publishers.)

La Nouvelle-Calédonie et les Iles Loyalty. By Fritz Sarasin. 9½ × 6½. 296 pp., 184 Illustrations, 8 Plates, and a Map. Georg and Co., Bale. (The Author.)

CLAY HEADS FROM METEPEC, NEAR TOHICA, MEXICO.

ORIGINAL ARTICLES.

Archæology. With Plate C. Breton.

Some Mexican Clay Heads. *By A. C. Breton.* 17

The small clay heads, found in great numbers in the fields covering the site of Teotihuacan, are known in museums chiefly from one type with closely shaven head, although there are several other kinds, including some with elaborate head-dresses characterising certain divinities. After having visited many ancient sites, collecting the small objects brought to the surface year after year by rain and cultivation, it may be said that the shaven heads are peculiar to Teotihuacan and are found nowhere else.

In fields near Otumba (beyond Teotihuacan) there was such a profusion of clay heads, obsidian arrow points, &c., that after a week's collecting I threw away two baskets full, whilst bringing away a very large quantity. These were varied in character. Round Tlaxcala, within a radius of five or six miles, on almost every bare space of tepetate, small heads, human and animal, were strewn about. On a hill some miles from Apizaco (north of Tlaxcala), there must have been an altar or temple to a goddess of maternity, judging from the feminine figurines which my servant found there. These were sent to the National Museum at Washington, but failed to arrive.

Almost every site in that region has its distinctive type of the little heads. Those in Plate C are from Metepec, a hill-site in the plain of Tolnca, beyond the mountains that shut in the valley of Mexico to the north-west. Although much battered and archaic in style, they are worth reproducing for the treatment of the eyes, which consist of double hollows separated by a ridge, with no pretension to represent the actual eye. Such noses as remain to them are unlike the usual Mexican type, also the peculiar head-dresses. The backs of the heads are quite flat. Decorated pots and "idols" were dug up at Metepec, but were carried off by an American collector about twenty years ago. The hill had been long under cultivation, but was known locally for the antiquities found there.

Miss H. Newell Wardle, of the Museum of the Academy of Sciences at Philadelphia, has looked over their large Mexican collections, and finds only three clay heads the eyes of which are treated similarly to those of Metepec, with surrounding ridges. Only one of these has the centre ridge. No provenance was given with them when received by the museum.

It is worth noting that the votive heads, held (by the long black hair) by the figures on the Inca tapestries,* have double eyes. These are two white quadrangular spaces enclosed by a dark line, which also divides them. None of the many other eyes in these tapestries are so treated.

All the Mexican clay heads need to be seen in the same lighting in which they were made, especially the more finely wrought ones of Teotihuacan. In a diffused light (as in a museum), the delicate details do not show, and they come out badly in a photograph, but when seen in a room lighted only by a door, Mexican fashion, many of them are surprisingly vivid, and real works of art. The heads illustrated are from 2½ to nearly 7 cm. high. No trace of colour remains on them.

Also illustrated in the Plate is a polished stone frog, purchased at the Indian town of Zacatlan, near the northern border of the State of Puebla, and on the edge of the barranca that ends the high plateau there. The ancient site was covered with young barley at the time of my visit, so could not be investigated. The frog is of unusually hard, close grained rock, specific gravity 2·845, and appears from the shape to have been made from a celt. It is a rare specimen and I gave it to the National Museum at Washington, where it is among their best polished stone

* See MAN, 1915, 22, Fig. 4. Owing to the dark colouring it is difficult to see the details.

objects and is the only one of its kind. The dimensions are 8·3 cm. by 4·3 cm. The hollows show as pale lines, like most Mexican carvings. There are only four digits on each extremity. The officials of the National Museum kindly permitted me to make all these drawings during a recent visit.

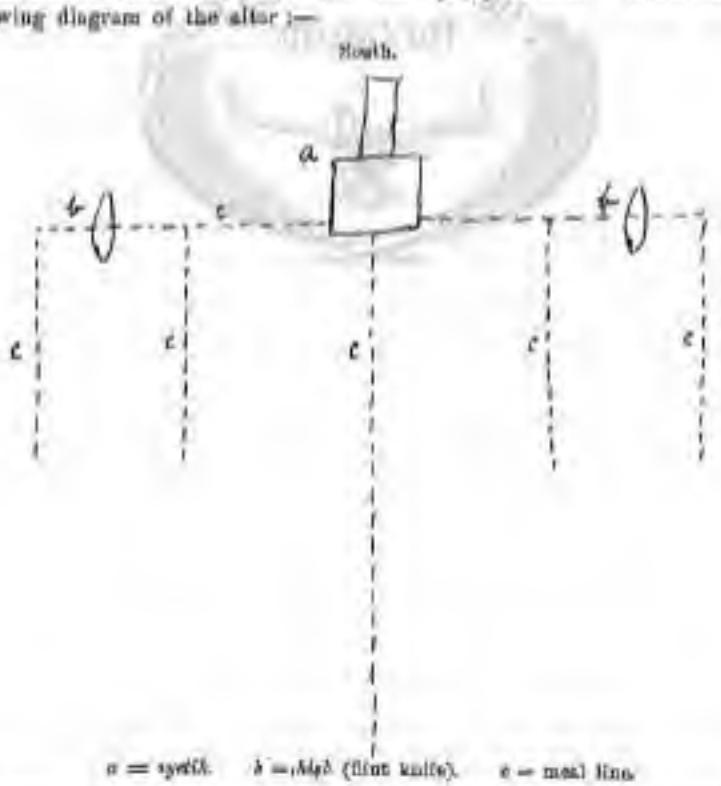
The frog is intimately associated with the coming of rain in Mexico (also in Peru), and the specimen has hands uplifted in a praying attitude whilst the tongue hangs out as if with thirst. It is a fact that the frogs croak at the end of the long dry season when every one is looking at the sky and hoping for a shower, and cattle in the fields low, "calling the rain." Mexicans say the frogs pray for rain, and in Yucatan the croaking of the large frog is a sure sign of rain within three days. Their contented thankful chant afterwards sounds quite differently.

A. C. BRETON.

New Mexico: Folklore. Parsons.

Mothers and Children at Laguna. *By Elsie Clews Parsons.* 18

Wana's baby was two weeks old on my last (1918) visit to Laguna, and as the baby lay in her beboodled board cradle on the floor or, still in her compartment, on the lap of her mother or her great-aunt, our talk led naturally from her and her short experience to ways with babies in general. Like other Pueblo Indian babies, she had been taken outdoors and presented to the gods. On the fourth morning of her life, before sunrise, one of the two surviving medicine-men of Laguna, the *shiwanna* (thunder) *shaani* came to the house and laid out on the floor of the upper room of the two-storied house his altar paraphernalia. Wana made for me the following diagram of the altar:—



a = *tyetik*. *b* = *hdpi* (flint knife). *c* = meal line.

The *tyetik* is a fetich or symbol of the deity within the earth, a deity who is to the Keresans a source of being and the most revered of all their supernaturals. *naiya*

(mother) *iyetiku*. The symbolic *iyetik* is an ear of corn wrapped with unspun cotton and set in a little buckskin cap. When set out on an altar—the only time it is exposed—it is dressed with feathers and encircled with a string of precious beads—turquoise and white shell beads, together with olivella or abalone shells. On either side of the *iyetik* in our diagrammatic altar is a flint knife. The flint knives serve in this case, I surmise, as in other cases of ceremonial usage, as a guard to the *iyetik* or altar against witches or evil spirits.* The central line of meal is a roadway for the *kopishtaiya*, the benevolent supernaturals, probably in this case more particularly for *naiya iyetik*, to come in by. Usually on altars the meal road leads from the east, the altar facing the east. I could not learn why in this instance the characteristic position was changed. In myth, to be sure, *naiya iyetik* lives at *shipapolima* (in the north).

In the diagram of the altar a medicine-bowl should have been represented, as from it, out of his shell cup,† the *chiaanna cheani* gave Wana a drink, and from it with his eagle feathers he also asperged mother and child, two little rites of constant occurrence in Pueblo Indian ceremonials. According to one informant there should also be a crook stick on the altar, as with it the *cheani* would sprinkle meal on the infant.

After the preliminaries at the altar, the order of which I could get with no certainty, the *cheani* took mother and child out on the southern terrace of their house. With them went Wana's aunt (her mother's sister; her mother is dead),‡ Getsitsa, the head of Wana's household,§ an old lady whom, in accordance with Keresan kinship terminology, Wana calls *naiya*, mother. Out on the terrace Gesitsa facing the east, said this prayer‖:—

shanno naiya osach wali gainise waniumaa sha shkutsipa
Now mother [iyetik] sun this morning I am going out I want
semaak nitaniguniske¶ sashgaaa sukintsi ome shkutsipa nitaniguniske da
my daughter grow up daily all the time this want grow up this
hinama osach hano dishe Gen.**
myself sun clan thus.

"Now Mother [*iyetik* understood], Sun, this morning I am going out. I want my daughter [the infant] to grow day by day. Thus all the time I want her to grow. I myself am of the Sun clan. I am Gen."

After sprinkling meal on the ground and making four times a circular gesture with both hands raised, palms upward, to the East and drawn back, a ritualistic invitation to the *kopishtaiya*, and after breathing on the infant,†† the *cheani* prayed as follows:—

towili naiya naishdiya tohomo tsawa nawiguniseshe
Here give mother [iyetik] father [Sun] that is all good relationship

* Spear points figure among the Sia in what appears to be a rite of exorcism after a birth. Stevenson, M.C.: "The Sia," p. 138, XI (1889-90).—*Ann. Rep. Bur. Ethnol.*

† Shells are used for medicine-water among the Sia, likewise among the Zuñi.

‡ The infant's paternal grandmother is unknown, the father being unknown; but, in any circumstance, I am told, it is the maternal, not the paternal grandmother who attends the presentation rite.

§ The other members are Wana's father and Wana's three-year-old daughter.

‖ Another informant, describing the presentation rite in general, asserted that the grandmother would not say any prayer.

¶ Also translated "grow strong." Another informant insisted that this word should be translated "to know about it."

** In other connections her name was always given as Getsitsa.

†† In Pueblo ceremonials sacrosanct things are commonly breathed upon, and impersonators of the gods, at Zuñi at least, breathe upon the layman. According to Stevenson, the Sia infant is breathed on. ("The Sia," p. 141.)

tsityu tsitawa hanenatakonishe emitoa shkutsipa naiya naishdiya towik*
of value goodness people multiplying this way want mother father take
iani cheowa tsame shkutsipa.
road take this ask want.

"Here I give you the child, Mother *iyetik*, Father Sun. That is all. Good and valuable relationship (i.e., of kin and clan), goodness, increase of people. Such I want. Mother *iyetik*, Father Sun, take the road [of the child's life]. This I ask and want."

Two ceremonial requirements in connection with or subsequent to the rite should be mentioned. Before the rite the mother's hair has been washed—a hair wash is commonly required before Pueblo Indian ceremonials—and before the rite and after, for twelve days after the birth, the woman is expected to be continent. In case of violation (*chenchsi*) she would dry up (*tsipanita*), i.e., die,† unless she were given a purge by the medicine-man.

In this presentation rite there was no reference to naming the infant, and when I made the acquaintance of the baby she had not as yet been given any name. How she would get her Indian name I did not hear from Waca,‡ but there was talk of how in course of time she would be given an "American" name in baptism at the Catholic church. Water would be put to her head and salt to her lips and the Spanish godparent institution would be entered into. Every Christmas thereafter her godmother, her mother's *comadre*, would give her a present—and her mother would give a return present to her godmother.

Laguna children, like other Pueblo Indian children, receive other presents, presents of a more distinctively native character. While a ceremonial by masked dancers or *katsina* is under way, parents will ask one of the dancers, perhaps a

* An unfamiliar word. The chiefs have a peculiar vocabulary.

† *Cp.* Parsons, E.C.: "Zuñi Death Beliefs and Practices."—*American Anthropologist*, XVIII, (1916), 240.

‡ According to other informants names are suggested by the medicine-man, but not at the presentation rite. (*Cp.* "The Sia," p. 141.)

kinsman, to make a bow and arrow or an *auwak* (a baby) for their child—bow and arrow for a boy, *auwak* for a girl. The parent supplies the materials, and in using them the dancer says a prayer for the good of the child. As among the Zuñi or the Hopi the dolls represent the *katsena* themselves. Fig. 1 represents a male impersonator called *nawish*. It was made in the autumn of 1917, during the *yakohanna* or corn dance, and until my visit a few months later it had been standing on a shelf of the child's house. Fig. 2 represents a *kuchinninaku* or girl *katsena*. It was given me by the little girl who had been playing with it. Fig. 3 represents the *ishtwa* (arrow, bow understood) given by the *katsena* to boys, to boys past infancy; to baby boys such a gift, it is believed, would bring with it life-long bad temper.

By an elderly informant, *comadre* by the way in eight families, was sung for me the two following lullabies:—

hawi hawi hawi-i amu maku showiminasse uwitsimikia sihamakoshewi
Who who who dear be quiet turquoise baby board on hush
showaini ni e a shuwiminatse uwitsimikia.
take care turquoise baby board on.

"There, there, there,
Dear be quiet,
On a turquoise* baby board
Hush, take care
On a turquoise baby board."

hawi hawi hawi kuchininaku tsekuma shutsainwits tsekuma shuuashgaitsits amu
Who who who girl why angry why captious, cross dear
kuchininaku tuwa tuwa chikatsenatse tuwa tuwa gaitayadyama shunnakura kwia
girl here here wild roses here here moonlight flowers give
chukwoya amu.
take dear.

There, there, there
Girl, why are you angry
Why are you captious, dear girl?
Here, here are wild roses
Here, here is moonlight
The flowers, take them, dear."

My singer was a knowing and communicative acquaintance. Unlike the younger generation at Laguna, she was interested in past or passing customs. Various beliefs and practices in connection with mothers and children of which she told seem worth recording. If a pregnant woman sits with her back to the sun the placenta will "stick." Hence when the placenta is retarded someone present is apt to say, "Perhaps she sat with her back to the sun and the sun baked her back." Twins may be due to witchcraft. A witch will make two balls of earth wet by urine and roll the balls in the direction of the woman who has urinated. Hence urinating in the road is disapproved of.† If a baby is born with teeth it is a sign that before his birth his mother has looked at a snake. Parental indiscretions of this kind are the stock explanation of congenital deformities at Zuñi.‡ My Laguna informant explained only one case in this way, the case of a child born with a piece out of

* The board was painted turquoise.

† Nor should water lying in the road be drunk. It would cause tuberculosis—"there are so "many travellers in a road."

‡ Parsons, E. C.: "Zuñi Conception and Pregnancy Beliefs."—*Proc. XIX, International Congress of Americanists*, pp. 382–3. Washington, 1917.

his ear, the explanation being that his father had gone out shooting during the pregnancy.

Soon after the birth, perhaps even the first day, ashes will be rubbed on the child,* rubbed in the form of a cross on forehead, on chin, and on legs—witches dislike ashes. After hearing about this witchcraft prophylaxis I asked Wana and Getsitsa if the baby had been rubbed yet with ashes. "No," said Wana, "but *naiya* " has been thinking about it." The next morning they told me the ashes had been rubbed on—rubbed on the forehead, as I saw when they showed me the baby, just as on Zuñi babies. The ashes were not rubbed on in the form of a cross, nor were they rubbed anywhere else on the body.

There is, or rather was, said my elderly informant, a prejudice at Laguna against clipping a boy's hair, a prejudice probably characteristic, I may add, of all the Pueblo Indians. Once a godchild who was out herding sheep had lice in his hair, so "they" cut it short. His mother felt greatly distressed, and exclaimed to her *comadre*, "They scattered my blood and my health to the four winds!"

Formerly at Laguna, in the days when there were no tables and the household formed a circle around the bowls on the floor, each kneeling on the left knee, none would drink until eating was accomplished. After the meal a senior might touch the breast of a child and say, "Now if all your food has gone down you may drink." Then or at any other time when a senior asked a child to bring him or her a drink the child was expected to stand with arms folded until the senior said, *Shatsuti*, "May you grow tall!" *Tawaa* (good, *i.e.*, "thanks") responded the junior.

ELSIE CLEWS PARSONS.

British New Guinea. Flint.

Muguru at Torobina, Bamu River. *By L. A. Flint.*

19 When visiting the village of Torobina, on Damara Island, in the estuary of the Bamu, I noticed that a new *dubu*† was just completed, and that a *muguru* was to take place in the village that night. After considerable persuasion the natives allowed me and a couple of the police to view the ceremony, and I went there at nightfall.

The interior of the building was decorated with crotons and nipa palm leaves to about 40 to 50 feet from one end. The men of the village sat beneath these decorations, a number of whom sounded the *kibi*,‡ whilst others kept up a song for about an hour and a half. A native, who was evidently the master of the ceremonies for the night, then went to the other end of the *dubu*, and the other men moved to the wall and sat in a line. After waiting for about ten minutes twenty-one nude women, each carrying a torch, marched two deep up the building to where the men were sitting. As the women approached, the men began to sing "Oh, Oh" for a couple of minutes; when they stopped singing the men jumped up and each claimed a woman.

Immediately all the fires were covered up and all was in semi-darkness, but I saw the natives copulating, and the young children who were present also witnessed it. After fifteen minutes had elapsed a *kibi* was sounded and the fires brightened up; the women returned to the far end of the *dubu*, and the singing recommenced

* *Cp.* "The Sia," p. 141.

† The *dubu* is evidently a "long house" presumably equivalent to the *dubu daima* of the Kerewa folk (A. C. Haddon, MAN, 1918, 99).

‡ According to E. W. P. Chinnery (MAN, 1917, 56), *kipi* is the name for a wooden trumpet in Northern British New Guinea; if the *kibi* is a similar instrument, it constitutes a new record *cf.* A. C. Haddon, MAN, 1917, 56). Probably it is a shell trumpet.

The same ceremony was repeated about every two hours till daybreak. At certain intervals during the night a native, who held in his hand a bow and some arrows, chased along the building, in a crouching position, another native. The fugitive purposely fell down three times before he reached the place where the other men were seated. Each time he fell the other native pretended to endeavour to have connection with him, to the great amusement of the spectators. This part of the ceremony is called *abami dufu*.

At daylight the centre of the *dubu* was screened off with nipa leaves. The elder people sat at one end of the *dubu*, the younger ones at the other, in order, so I was informed, that the young children might discuss what they had seen in the night.

At daybreak payments in arm shells, arrows, pigs, etc. were made for sons and daughters who were being married.

A Bamu River native considers it essential in pedotrophy that the children should learn how they come into existence, so whilst witnessing the copulation natives explain to the children who are sitting near them how their mothers became enceinte; advice relating to matrimonial matters is also tendered at a *muguru*.

At a *muguru* wives are exchanged, and the younger women pass temporarily into the possession of the elder men. The *muguru* ceremonies continue for one month. On the last night a number of wooden figures—two men (Agiba and Marigiro), a woman (Sirura), a crocodile (*sibora*), a shark (*omi*), and a black pigeon (*badu*)—are brought into the *dubu* and shown to the young people, who are supposed not to have seen them previously (the reason for this could not be explained).

A *muguru* is always held upon the completion of a new *dubu*. L. A. FLINT.

Central America: Chronology. Long. 20

The Highest Known Maya Number. *By Richard C. E. Long.*

In this paper the same method of writing Maya numbers will be used as in two former ones (MAN, 1918, **70** and **74**), and the correlation with Christian chronology used in those papers will be applied to the extremely interesting discussion by Mr. Morley (*An Introduction to the Study of the Maya Hieroglyphs*, p. 116) of the date on Stela 10 at Tikal. The *kin* number in this date is missing, and taking this as 0, he reads the number as 1-11-19-9-3-6-2-0, the last part, viz., 9-3-6-2-0, being an ordinary initial series. He does not give the full calendar date for the zero point of the whole of this immense number.

Now, in the usual method of solving Maya dates all the even calendar rounds are first subtracted, so as to leave a convenient number to deal with by whatever method of solving is used. The table of calendar round multiples given by Mr. Bowditch only goes up to 80 calendar rounds, which is insufficient for numbers running into great cycles or upwards. If the number is not very much greater than 80 calendar rounds two or more of the multiples can be added together, but this is impracticable with very high numbers like the present one. To construct a table of multiples of calendar rounds running high enough would require much labour and a very large table, most of the entries in which would be useless, as the extremely high numbers found are so few. The following method is here suggested, which requires only a short table, and is capable of application to all numbers, however large.

If the Maya system of numeration was purely vigesimal any number in the usual system of transcription used could be multiplied by any power of 20 by

moving it so many places to the left and adding ciphers, just as is done in our decimal notation to multiply by powers of 10. The break in the vigesimal system caused by the *tun*, containing 18 *winals*, makes this impossible unless the number contains no odd *winals* or *kins*. The number 2-7-9-0-0 (= 18 calendar rounds) is such a number, and its multiples from 1 to 20 are given in the annexed table. Any number in Maya notation in this table can be multiplied by any power of 20 by simply moving it so many places to the left and adding ciphers. This can be applied to the reduction of numbers exceeding 18 calendar rounds by subtracting the largest possible number in the table from the first five periods of the number to be solved (or from the first six periods if no number in the table will go into the first five), then bringing down the next period (or the next two or more periods if required) of the number to be solved, and writing it at the right of the remainder, and subtracting the highest possible number in the table from this new number, and so on, till a remainder less than 18 calendar rounds is obtained. This last can be dealt with by Mr. Bowditch's table of calendar round multiples. The process is in fact long division using Maya notation. Applying it to the present case we have—

Number to be solved	1-11-19- 9- 3- 6- 2-0
From first 6 periods subtract 13 times 2-7-9-0-0 per table	1-10-16-17- 0- 0
Remainder with next period (2) brought down	1- 2-12- 3- 6- 2
Subtract 9 times 2-7-9-0-0	1- 1- 7- 1- 0- 0
Remainder with next period (0) brought down	1- 5- 2- 6- 2-0
Subtract 10 times 2-7-9-0-0	1- 3-14-10- 0-0
Remainder (which is less than 18 calendar rounds)	1- 7-16- 2-0
Subtract 10 calendar rounds per Bowditch table	1- 6- 7- 4-0
Remainder	1- 8-16-0

This last being less than a calendar round, can be dealt with by any method of solving. The best is Mr. Bowditch's (*The Numeration Calendar System and Astronomical Knowledge of the Mayas*, p. 302).

Now 9-3-6-2-0, if a date in the Long Count, is 5 Ahau 8 Pax (13 June 29 B.C.), so that the zero point of the large number of eight periods is found, by solving for the remainder 1-8-16-0, to be 5 Ahau 8 Yaxkin. This zero point would fall on 22 June 5042164 B.C. (Julian). As the usual Maya era, starting from 4 Ahau 8 Cumhu 13 January 3642 B.C., is called the Long Count, it is convenient to call the era starting from 5042164 B.C. the "Extended Count." The principal points reached and passed over in the Tikal inscription are therefore :—

		B.C.
Zero point of Extended Count	5 Ahau 8 Yaxkin	22 June 5042164
1-0-0-0-0-0-0-0	12 Ahau 8 Ceh	31 July 1888160
1-11-0-0-0-0-0-0	7 Ahau 13 Zip	3 November 153458
1-11-19-0-0-0-0-0	4 Ahau 8 Cumhu	13 January 3642
1-11-19-9-3-6-2-0	5 Ahau 8 Pax	13 June 29

The next problem is to explain why this zero point was chosen for the beginning of the Extended Count. It may safely be assumed that the Extended Count was not devised until after the starting point of the Long Count had been already fixed. How, then, did the Mayas come to count back 1-11-19-0-0-0-0-0 from the latter to arrive at the date of the former? If the number connecting the zero points of the two eras was composed of one of each period above the cycle, or if the whole number was a multiple of some of the usual factors used, such as 9 or 13, it could

be understood how they settled upon it. But in fact it is an odd Maya number, so that this explanation will not hold.

Referring to the reduction of the whole number given above, it will be noticed that it equals (13 × 400 + 9 × 20 + 10) 18 + 10 calendar rounds + 1–8–16–0. Mr. Bowditch has shown that the Mayas appear to have corrected their solar calendar by a calculation of intercalary days on the basis of 25 days for each 104 years (equal to 2 calendar rounds) and one day for each 4 years in the excess, and, further, that when this correction exceeded a year, they dropped the whole years required in the sum of intercalary days required to make the correction, and simply counted the odd intercalary days remaining. On this calculation the number of intercalary days required in 1–11–19–9–3–6–2–0 is 1,322 vague years of 365 days each + 352 days. Neglecting the years, there remain 352 days, which would be the amount of the correction to be added if the calendar was right at the zero point and had to be corrected at the terminal date. In the present case it is evident, as the zero point far antedates all human history, that the correction must be the converse of this, so that the calendar must be assumed to be right at the terminal date and to require to be corrected at the mythical zero point obtained by calculation. In that case, as it is a backward correction, the number of days necessary is 13 (i.e., 365 − 352), so that the calendar at the zero point would require to be corrected by adding 13 days.

The terminal date has been shown to fall on 13 June 29 B.C. (Julian). At this date the Julian calendar was approximately correct, so that the summer solstice fell on 21 June, and the 13 June was 8 days before the solstice. If, then, the terminal date was 8 days before the solstice, and the correction required at the zero point was 13 days, it follows that the zero point fell 13 − 8 (= 5) days after the solstice. As the difference of 5 days from the calculated date of the solstice is so very small, it seems probable that the intention of the Mayas in choosing the zero point of the Extended Count was to reach a date which, besides being distant an even number of great cycles from the zero point of the Long Count, was also approximately the date of the summer solstice. Doubtless the difference of 5 days arose from the desire to make it fall on the important day, Ahau. It, in fact, fell on the nearest day Ahau to the calculated day of the solstice.

It need hardly be said that the date reached was not within 5 days of the true day of the solstice at the time of the zero point of the Extended Count, but it was distant that amount from what would have been the date calculated for the solstice by the Mayas. As the date 9–9–16–0–0 4 Ahau 8 Cumhu fell on the true solstice (MAN, 1918, 70), and appears to be the point from which they calculated back to fix the zero point of the Long Count, it would be natural that the Mayas would reflect that the latter date did not itself fall on the solstice, and that they consequently would then extend their calculations, using larger and larger periods, till they fixed the zero point of the Extended Count so as to fall at the summer solstice according to their computation. This explanation confirms Mr. Morley's views as to the length of the periods above the cycle. It also, like the other astronomical connections shown in my former papers, adds a further element of proof of the correctness of Mr. Bowditch's correlation of Maya and Christian chronology. The greater the number of intelligible explanations of series which can be shown to follow if this correlation is used, but which fall to the ground with any other, the stronger is the cumulative probability that this correlation is the correct one. Hence the above theory as to the huge number on Stela 10 at Tikal may help to solve the all-important problem of the date of the Southern Maya civilisation.

It is worthy of note that if the Mayas at the time of this inscription had used

the system stated by Landa to be used in his time, namely, a correction of one day for every four years, as in the Julian calendar, the zero point of the Extended Count would have fallen within one day of the calculated day of the summer solstice. This can be seen above, as it fell on 22 June 5042164 B.C. (Julian). Although such a calculation gives an even closer result than the foregoing, it is safer to assume that they proceeded on the system shown by Mr. Bowditch to have been used in the other inscriptions. At the same time there is something to be said for the theory that the Landa method was used in this inscription. Except those from Palenque, all the instances collected by Mr. Bowditch of calculations to rectify the calendar are in the "Great Period" from 9-15-0-0-0 onwards. As to Palenque, all the "historical" dates there are in the "Middle Period" commencing at 9-10-0-0-0 and prior to 9-15-0-0-0. The inscription on Stela 10 at Tikal is in the "Archaic Period" prior to 9-10-0-0-0, and more than that, it is the second earliest "historical" inscription yet discovered, and is at the same city where the earliest one occurs. It is therefore about 200 years older than any of the other cases of such calculations, and it would be very probable that at that early period the Mayas used the less accurate calculation of one day in every four years, and that at the height of their civilisation in the Middle and Great Periods they had adopted the improved one of twenty-five days in 104 years.

A third suggestion may be offered, namely, that the date chosen for the zero point was decided on because upon it the two different systems of calculation, which we may call the Landa and Bowditch systems, gave an almost identical result, there being only four days difference.

Regarding the question why the inscription on Stela 10 at Tikal is the only one which gives the date in the Extended Count, it is worthy of note that 8 Pax, the month day of the terminal date of this series, is exactly 9 *winals* (half a *tun*) distant in the annual calendar from 8 Yaxkin, the month day of the zero point. This seems a good reason for setting out the full Extended Count in the inscription.

TABLE OF MULTIPLES OF 18 CALENDAR ROUNDS.

18 Calendar Rounds.	Great Cycles, &c.	18 Calendar Rounds.	Great Cycles, &c.
1	2-7-9-0-0	11	1-6-1-19-0-0
2	4-14-18-0-0	12	1-8-9-8-0-0
3	7-2-7-0-0	13	1-10-16-17-0-0
4	9-9-16-0-0	14	1-13-4-6-0-0
5	11-17-5-0-0	15	1-15-11-15-0-0
6	14-4-14-0-0	16	1-17-19-4-0-0
7	16-12-3-0-0	17	2-0-6-13-0-0
8	18-19-12-0-0	18	2-2-14-2-0-0
9	1-1-7-1-0-0	19	2-5-1-11-0-0
10	1-3-14-10-0-0	20	2-7-9-0-0-0

RICHARD C. E. LONG.

Obituary.

Kennard.

J. P. Johnson. *By A. S. Kennard.* **21**

Prehistory has suffered a great loss by the death, at the early age of thirty-eight, of J. P. Johnson. Born in London, 1880, educated at Dulwich College and the Royal School of Mines, considerations of health compelled him to migrate to South Africa in 1902. At the outbreak of war he was resident in Tasmania, where he intended to settle, but he returned to Johannesburg, where he died from pneumonia, following an attack of influenza, on October 18th last. At an early age he was an

enthusiastic student of the later geological deposits, more especially those containing human relics, and the result of his researches were published in the *Essex Naturalist*, the *Geological Magazine*, and the *Proceedings of the Geologists Association*. In the virgin field of South Africa he found ample scope. As a mining expert his services were eagerly sought by prospecting syndicates, and he availed himself of the opportunities afforded by these exploring expeditions. The results of his researches were embodied in the *Stone Implements of South Africa*, 1907, 2nd edition 1908; *Geological and Archæological Notes on Orangia*, 1910; and the *Prehistoric Period in South Africa*, 1910, 2nd edition 1912. Perhaps his most important discovery was the fact that a sequence of flint implements, differing only in detail from that of England, can be shown in the Transvaal, whilst the Bantu origin of the Zimbabwe ruins was clearly demonstrated. A strong supporter of "Eoliths," it may be noted that he maintained that the Tasmanian implements did not belong to that cultural stage, but to a later one.

He was a member of the Council of the Geological Society of South Africa, and was appointed by the South African Government a member of the Commission to report on the Petroglyphs and Rock-paintings of South Africa, many of which are reproduced in *The Prehistoric Period in South Africa*, 2nd edition. He was also a keen student of the Ethnology of South Africa, a fact which materially helped him in the solution of many South African problems. A. S. KENNARD

India, South. Frazer: Achariyar.

Milk Customs of the Todas. *By Sir J. G. Frazer, D.C.L., and K. R.* **22**
Achariyar.

The Todas of the Nellgherry Hills, in Southern India, are a classical example of a purely pastoral tribe. Their customs have been investigated by several inquirers, who have recorded the results of their investigations in a series of books, of which the latest, by Dr. W. H. R. Rivers, is by far the fullest and the most scientific.* When my lamented friend, the late Rev. J. H. Moulton, was in India in 1916, he spent some time on the Nellgherry Hills, and in the hope that he might be able to ascertain further particulars concerning this interesting tribe, I wrote to him suggesting a number of points which seemed to call for elucidation. Before my letter reached him he had left the Nellgherries, but he was kind enough to have inquiries instituted by others on my behalf. Among those whom he interested in the subject I am especially indebted to the Hon. Sir A. G. Cardew, member of the Madras Government, who actively exerted himself to procure the information I wanted. His exertions bore fruit in the subjoined notes on Toda customs, furnished by Rai Bahadur K. Ranga Achariyar.

The point to which I particularly directed my inquiries was the use which the Todas make of the milk of their buffaloes. Among many pastoral tribes of Africa the drinking of milk is subject to certain curious rules and restrictions, based apparently on a relation of sympathetic magic which is supposed to exist between a cow and her milk even after the milk has been drawn from her and has passed into the stomachs of the tribespeople.† Now the Todas also regulate the use of

* *The Todas*, by W. H. R. Rivers, London, 1906. Of earlier accounts the most notable are *A Description of a Singular Aboriginal Race Inhabiting the Summit of the Nilgherry Hills*, etc., by Captain Henry Harkness, London, 1832; *The Tribes Inhabiting the Neilgherry Hills their Social Customs, and Religious Rites*, from the rough notes of a German Missionary [F. Metz], Second Edition, Mangalore, 1864; *An Account of the Primitive Tribes and Monuments of the Nilagiris*, by James Wilkinson Breeks, London, 1873; *Travels Amongst the Todas, or the Study of a Primitive Tribe in South India*, by William E. Marshall, London, 1873.

† These rules and restrictions I have described and discussed in *Folk-Lore in the Old Testament*, Vol. III, pp. 111 *sqq.*

milk by an elaborate code of rules. In his valuable treatise on the tribe Dr. Rivers had concluded that this elaborate ritual "has grown up as a means of counteracting "the dangers likely to be incurred by this profanation of the sacred substance, or, "in other words, as a means of removing a taboo which prohibits the general use "of the substance."* On the other hand, arguing from the analogy of pastoral tribes in Africa, I conjectured that the Toda rules regulating the use of milk may have been based originally on a supposed sympathetic relation between the buffalo cow and her milk, a relation of such a nature that any abuse of the milk would react injuriously on the cow and might even cause her death. On this hypothesis the observation of the rules was intended to safeguard rather the cows than the drinkers of their milk. The inquiries of Mr. Ranga Achariyar do not confirm my conjecture. On the contrary, they tend to show that among the Todas at the present time there is no belief whatever in a magical sympathy between the cows and their milk. Whether at a more or less remote time in the past the Todas may have held any such belief we cannot tell, and it would be idle to conjecture.

Note on the Buffaloes and Milk Customs of the Todas, by Rai Bahadur K. Ranga Achariyar.

The Todas maintain in every mand† ordinary buffaloes which are not sacred. So far as these animals are concerned, there are no restrictions of any kind. They are milked and tended by boys or men, although at odd moments, when boys and men are otherwise engaged, girls who have not attained puberty may look after these animals. Women and girls who have attained puberty are not usually allowed to do this.

The milking of the buffaloes, the churning of the butter-milk, and other operations connected with butter-making are carried out only by males. Women are not allowed to milk the buffaloes, nor are they permitted to touch the vessels in which the milk is directly drawn. Even if such vessels are touched accidentally by women, they are discarded and thrown aside. The milk is poured into another vessel, and afterwards it may be taken into the mand by women. Although there is no prohibition as regards the vessels used in churning butter-milk in the ordinary mands, women, as a rule, do not take any active part in the process of churning. The milk and its products form the substantial part of the Todas' dietary, and these can be handled freely both by men and women. The ordinary buffaloes may be disposed of by sale or the herd may be increased by purchase just as they like. So there is not any perceptible diminution of the animals in the ordinary herds.

The buffaloes attached to the sacred dairies are considered to be sacred animals, the degree of sanctity depending upon the kind of the dairy. Male buffaloes of even the sacred herd are not considered sacred.

The Tarvali dairy is of the lowest grade, and they are found attached to many of the mands, and hence they are numerous. The buffaloes attached to this dairy may be increased by gifts and offerings. They may also be added to by purchase of animals, provided they belong to the same kind of sacred herd.

The Kudrpali buffaloes come next in rank. At present the number of herds of this kind are not many. Additions are not freely made, as only buffaloes of this kind have to be obtained, and these are not numerically strong. Although the Kudrpali dairy is considered to be of a higher rank than the Tarvali dairy, yet buffaloes of both these dairies may be kept and grazed together, either near the one or the other. They may also be milked together, provided the milk drawn from

* W. H. R. Rivers: *The Todas*, p. 291.

† That is, village.

Kudrpali animals is kept separate from the milk of the Tarvali herd. The milk of both the herds may be kept in either of these two kinds of dairies and churned. But the churning operations should be attended to by the respective dairy priests, the Tarvali herd milk by the Tarvali dairy priest, and that of Kudrpali by the Kudrpali dairy priest.

The buffaloes attached to the Kagvali dairies are more sacred than those of the above-mentioned two dairies. At present there are only four or five dairies of this kind and they all belong to the clan Taradr. No other clans seem to have this dairy. Additions to this herd are allowed only when there is a considerable dwindling of the herd. As is the case with the other kinds of sacred buffaloes, additions have to be made by selecting animals belonging to Kagvali dairies.

The Ti dairy is the highest in rank. It is not found near ordinary mands where people live. Generally they are very far from ordinary dwelling-houses of the Todas. Attached to this dairy, there are two kinds of buffaloes, the ordinary non-sacred ones and the sacred ones. The former are meant for the personal use of the palol (priest), as the Ti dairy is far away from dwelling-houses of the Todas. The Ti herd may also be augmented by purchase, gifts, or offerings as a penalty. When a calf or a buffalo is brought by a person, he is accompanied by some of his friends. They all stay at a little distance from the dairy. Before reaching the dairy they provide themselves with leafy twigs of either or both of the plants *Hedyotis stylosa* and *Myrsine capitellata*. The palol after finishing his work comes towards the offerer of the animal carrying a sprig of *Hedyotis stylosa* or *Myrsine capitellata*, and stands at a distance. The animal is then driven towards the palol, and he drives it towards the herd, after passing the leafy twig along the body of the animal two or three times. If the animal is one of the ordinary herd it is driven into the ordinary herd of the Ti dairy and if sacred into the sacred herd.

Milk is usually drunk without boiling it. It is generally boiled along with rice and never by itself. Milk drawn from ordinary buffaloes may be drunk by all persons, males or females, and it may be boiled with rice whenever they like. But the general rule is to boil it with rice on some special occasions only, such as festivals, renewal or roofing of the dairies and mand houses. During September or October on a particular day milk is boiled with rice in most of the mands. On this day the palol and his assistant light a fire at the foot of a hill, and so this day is considered to be a festival day. In some mands some of the Todas boil milk by itself if they wish to take it with coffee, although it is against the ordinary customs.

The milk of the sacred buffaloes may be used only by the priests of the dairy for ceremonial purposes and on special occasions. In Tarvali dairies the sacred milk may be boiled with rice and eaten by the priest on an annual festival day in June. On ordinary days he should not drink milk drawn from the Tarvali sacred buffaloes. When milk is drawn for the first time from a buffalo in the Ti dairy, it is boiled with rice, and this cooked food may be eaten only by the palol, his assistant, and the Morol (men of the Melgars clan), and not by other Todas. When new vessels such as pots or bamboo measures are purchased for the dairy, milk is boiled along with rice.

The milk drawn from the sacred buffaloes of the Ti dairy ought not to be drunk by any one, not even by the palol and his assistant, although milk drawn from the buffaloes of Kudrpali and Kagvali dairies may be drunk by the priests of those respective dairies. Ordinary Todas may not at all drink the sacred milk, and they believe that they will die if they drink it. The Worsol is also prohibited from using the sacred milk except on special occasions. But he is permitted to

dole out milk mixed with butter-milk to other Todas, provided they receive it in the open, outside the limits of the dairy.

Women in child-bed may drink milk only after three months in the case of the first child, and after one month for subsequent births. Even then they must drink butter-milk given by a Morol (a male of the Melgurs clan), and afterwards milk. Prior to drinking the butter-milk and milk a purificatory ceremony has to be gone through by the woman. This ceremony consists in eating a small quantity of buffalo dung, a small quantity of the bark of Mellosma, and bits of leaves of the grass *Eragrostis nigra* along with butter-milk. As a purification for the child, a small quantity of milk in a spoon is passed round the calf three times, and then a portion of the milk is spilt on the head of the calf, and the remainder is poured into the mouth of the child. After this ceremony the child and the mother may take milk freely.

Butter is never sold as such. It is sold only after clarifying it into ghee. The ghee is the property of the priest. He may sell it at any time, except on certain specified days.

The urine of the buffalo is not at all considered to be sacred, although its dung is used for cleaning and purification. On ceremonial occasions the dung is used in the mands and in the dairies for the floor. In the dairies, after smearing the floor with dung, they sprinkle the bark of the tree Mellosma.

The palol, or the priest of the Ti dairy, is considered to be a very sacred person. He should not approach mands, funeral parties, and women. He must not touch any member of the Toda community. If he touches an outsider or goes to any other Toda mand or to the bazaar he ceases to be a palol. The preparing of the buffalo for sacrifice at a funeral is the work of the assistant of the palol. A palol may go to another Ti dairy. If he has to obtain anything, he has to get it through his assistant. He is prohibited from intercourse with women. Even if he is a married man he must leave his wife, and may not even see her so long as he continues to be the palol.

Todas generally abstain from meat, though occasionally some of them eat venison. The flesh of a male calf sacrificed at the ceremony called "Erkumpthipami" is eaten by Toda men. This is done occasionally. In some mands they have begun to eat fowls, mutton, dry fish, and hare.

All the restrictions regarding the sacred buffaloes and the milk are very rigidly observed by all the Todas, as the observances are not difficult from their point of view. They believe that any breach of the restrictions may lead to sickness or death of the offender himself or of some other member closely related to him, or of the buffaloes belonging to his mand. All the taboos on the dairy and the milk are meant only for the wellbeing of the Todas primarily and of the buffaloes secondarily. The wellbeing of the buffaloes is necessary for their own wellbeing. There is not the slightest trace among them of the belief that the restrictions are in the interests of the buffaloes or for their benefit. Dr. Rivers is perfectly right in thinking that the restrictions are believed by the Todas to be imposed for their benefit only, and not at all for the benefit of the animals. The breaches of the restrictions are no doubt believed to cause injury or even death to the buffaloes. Even then the Todas think that it is meant to injure them. For example, if buffaloes of any dairy were to die due to the breach of rules by any palol, they think the loss of the animals is to injure the palol, as he is the offender. They never think of the buffaloes and their injury as purely affecting them. There is not the slightest evidence to infer that among these people there is a belief in a magical sympathy between the cows and their milk.

K. R. ACHARIYAR.

REVIEWS.

America: Anthropology.

American Journal of Physical Anthropology. Vol. 1. No. 2. Washington, April–June, 1918. **23**

The second number of this journal begins with the first part of a History of Physical Anthropology in North America, by the editor, Dr. A. Hrdlicka, with accounts of the principal workers and writers who have passed away and useful bibliographies, especially of the Smithsonian Institution publications relative to the subject.

Dr. S. G. Morton (born 1799), the chief pioneer, was a practising physician who also taught anatomy, took an active interest in the Academy of Natural Sciences at Philadelphia, and collected nearly a thousand crania for his own study. His great work, *Crania Americana* (1839), is remarkable for the care and skill shown in his scheme for measuring skulls, the six most important measurements being taken precisely as they are to-day under the agreement of the Congress of Monaco in 1906. His collections are at the Academy of Sciences.

The foundation of the Peabody Museum of American Archæology and Ethnology and of a Professorship in the same subjects, at Harvard in 1866, was an event which had also a great influence on physical anthropology. Under the directorate of Professor F. W. Putnam (from 1875 until his death in 1915) the museum became a nursery for students who have since done well in the various branches of anthropology. Professor Putnam was chief of the department of ethnology at the great Chicago Exposition in 1893, and assembled important collections which formed the nucleus of the present Field Museum of Natural History. Assisted by Dr. F. Boas, he initiated anthropometric observations on the North American Indians. Between 1894 and 1903, whilst he was Head Curator of the Department of Anthropology at the American Museum of Natural History, New York, he built up great collections, including those of Physical Anthropology, and was instrumental in organising the Jesup and the Hyde Expeditions.

Professor Otis T. Mason, curator of ethnology in the National Museum at Washington (1884–1908), was especially helpful in somatology, and several of his published papers, with his annual contributions to anthropological bibliography, were of real service. When the museum was reorganised in 1897, the department of anthropology was divided into eight sections. In 1903, a Division of Physical Anthropology was added, and Dr. A. Hrdlicka was placed in charge. The division now has 10,000 racial crania and skeletons, 1,500 human and animal brains, and thousands of photographs, casts, and other objects, all accessible to students.

In Canada, Sir Daniel Wilson, of University College, Toronto, and Sir William Dawson, President of McGill University, Montreal, were pioneers. The second volume of *Prehistoric Man*, by the former, is devoted largely to notes and original measurements of various American crania, including valuable series of Huron and Eskimo. *Fossil Men and their Modern Representatives*, by Sir W. Dawson, was also a beacon when it appeared. The premature death of Dr. G. M. Dawson, Sir W. Dawson's gifted son, was a heavy loss to science. His clear brain and judgment enabled him to make observations of the highest value on the Indian tribes with whom he came in contact during his exploring expeditions in the north-west.

Other papers in the journal are: Notes on the cephalic index of Russian Jews in Boston, by C. E. Guthe, with diagrams and tables. Comparing Jews born in Russia with those born in America of Russian parents, the author finds a slight decrease in the cephalic index of the latter, as did Dr. Boas among the Jewish immigrants in New York. Neither observer has any solution to offer. R. G. Harlin

describes a method, by the use of a solid medium, in the preparation of small vertebrate and human skeletons by bacterial digestion, which appears useful.

Mr. E. T. Williams, Chief, Far Eastern Division, Department of State [Foreign Affairs], Washington, has gathered extracts from many recent and competent authorities on the origins of the Chinese. He inclines to the belief that the resemblances between the Sumerians and the ancient Chinese in language and script (ideograms), as well as in appearance, were due to their having been together in Central Asia before migrating east and west, and quotes from the Shan Hai King, a Chinese work of great antiquity, in support of this view.

The Notes on Current Literature are an important feature in the journal, occupying thirty-five pages. They are arranged according to subject and are chiefly from American, French, and English sources, with one of German origin. This is on an article by F. Krans, Jena, 1917, dealing with body proportions in connection with evolution, growth, function, and constitution of the individual, and with the value of special constitutions in the war: "Prematurely advanced statures and "excessive statures are in general pathological rather than physiological manifesta- "tions, and such individuals have been repeatedly proved to be weaker than others "in Germany during the war." The "Duration of Life and the Conditions Associated with Longevity," by A. G. Bell, must be an interesting study. The author took the genealogy of the Hyde family as a foundation, with records of nearly nine thousand persons, of whom the ages at death of about three thousand were known:

> The majority of the persons who were the only children of their parents died young, but there were only forty-one cases.
>
> Both in very small families (containing one or two children) and in very large families (containing thirteen or more children) the proportion who died young was very large and the proportion who lived to be old small.
>
> The proportion who lived to be old increased with the size of the family up to families containing nine or ten children, and fell again in the case of larger families.

It is to be hoped that ample support may be given to the praiseworthy efforts of the editor and his associates in this new enterprise. A. C. B.

Africa, East: Linguistics. Fell.

A Tonga Grammar. By J. R. Fell, of the Baila-Batonga Mission. London: S.P.C.K. 1916. **24**

This is a concise grammar of the language spoken in the Zambesi Basin below the Victoria Falls and on the Batoka Plateau. It consists of numerous tables of word-forms and copious examples, and is designed to be used when reading literature with a native teacher. It has no exercises or vocabularies.

The book will, no doubt, be found very useful for memory work and for reference. S. H. RAY.

ANTHROPOLOGICAL NOTE.

25

ACCESSIONS TO THE LIBRARY OF THE ROYAL ANTHROPOLOGICAL INSTITUTE.

(Donor indicated in parentheses.)

High Albania. By M. Edith Durham. 9 × 6. 348 pp. With Illustrations and Map. Edward Arnold. 1909. 14s. net. (The Author.)

From Darwinism to Kaiserism. By Robert Munro, M.A., M.D., LL.D., F.R.S.E., F.S.A.Scot. 7½ × 5¼. 175 pp. James Maclehose and Sons. 4s. (The Author.)

EYRE AND SPOTTISWOODE, LTD., His Majesty's Printers, East Harding Street, London, E.C. 4.

FIG. 1.—MAN'S HAIRDRESS.

FIG. 3.—BUNDA WOMEN.

FIG. 2.—BOMBUNDA EMBROIDERY.

FIG. 4.—MAN'S HAIRDRESS.

THE NORTHERN BABUNDA.

ORIGINAL ARTICLES.

Africa: Ethnography. With Plate D. Torday.

The Northern Babunda.

By E. Torday.

26

The Northern Babunda are an offshoot of the "Kinabunda" of Angola, with whom L. Magyar has acquainted us. *Babunda* is the name by which they are known by their neighbours. Sir Harry Johnston says that *-bunda* is a root often associated with serf and helot tribes, but this can scarcely be the case with the free and powerful people in question; it is more probable that, as applied to them, the root is derived from the verb *kubunda*, to join together in partnership; or, better still, from *kubunda e dila kiantwadi*, to combine for the purpose of trade. For we were told that the tribe came from the South, from a place on the Upper Kwilu called Moshinje, as traders, and, finding the country fertile and sparsely populated, the first comers induced other tribesmen to follow and to settle there; there was no war, no conquest, simply a peaceful penetration which ended with the expulsion or absorption of the small aboriginal population. The date of this immigration can be fixed as being contemporary with the Jagga wars (XVIth Century), for we know that, when the Babunda (who had only acquired the habit of anthropophagy from the Jagga) freed themselves from that domination, certain sections of the tribe refused to give up cannibalism and emigrated.* The Babunda, who live on the banks of the Lubue, told us that they used to be cannibals when they lived near the Kwilu river, but on arriving at their present abode they lost so many people by disease that the fetishmen forbade the practice.

The Northern Babunda call themselves *Ambuna* (sing. *Mombuna*). They are a fine, tall (average about 5 ft. 8 in.), heavy boned, short legged, very dark-skinned race, with pleasant features. They are friendly but shy, hospitable but very reserved. They are brave and never shirk a fight, though they prefer to keep the peace. They are very vain, the men more so than the women, and their taste for adornment is specially displayed in their hair-dressing. It is practically impossible to describe the various ways in which they arrange their abundant crop of hair, for new fashions appear daily, yet there are certain "standard" styles which are in general use. Some men wear heavy long tresses, often over a foot long and 4 to 5 inches wide, hanging down their back; others arrange it in the shape of a fireman's helmet (as illustrated in Magyar), or again in the imitation of a cock's comb, formed by knots in a row from the forehead to the nape of the neck. Feathers, combs, false or real antelope horns, bones (sometimes human), or straw ornaments complete the coiffure. Beards and moustachios are generally only worn by chiefs; the former are, as a rule, tied up in a knot under the chin. Women plait their hair in several longitudinal ridges much more carefully in the east than in the western section. Boys frequently wear a small stick in the ear lobe, but grown-up people never; even the hole seems to close up again, for we could find no traces of it in adults.

With the exception of infants all Babunda are clothed; Manchester goods, though used in barter, are practically never worn, the clothing being made of three kinds of cloth; all home-made from the fibre of the raphia palm. These are: *Bunubun*, plain cloth; *Lubawa*, cloth with interwoven pattern; and *Lobubaun*, cloth with embroidered black, lozenge-shaped pattern. The men's dress is generally composed of two pieces of either of the two first-named kinds; a smaller piece in front, from hip to hip, and a larger piece behind, held in place by belts made of hide, bark or fibre. The thighs are left bare and so is the greater part of the buttocks (in case of boys, they are entirely uncovered), though some men wear a sort of tail about

* Magyar László: *Utazások Dél-Afrikában.*

4 inches wide, made of cloth, hanging down their back from the middle of the belt. The cloth worn by men is frequently ornamented with tassels and fringes. Chiefs wear one long piece of cloth reaching down beyond the knee, and cover their heads with cloth.

The correct dress of women consists of two pieces of *Lubawa* sewn to a central strip of *Lobubasa*; this embroidered strip is worn behind straight down in the middle. Another embroidered strip forms the upper edge. In front the two ends meet above the navel (which must not be shown) and are held together by a large iron pin about 1 foot long; the lower ends of the vesture often stand apart. Unmarried girls wear their buttocks naked, matrons cover them. A *Mombandu*, to whom a reference will be found on p. 53, wears very short cloth, not over a foot broad. The garments of women are sewn with fibre, for which purpose native-made needles are used. Not only do the men weave the cloth, but they also embroider the Lobubasa for their wives; the very beautiful patterns are made from memory.

Ornaments of seeds, imported beads, bunches of aromatic herbs, iron, brass and copper rings and bracelets are worn by both sexes; whistles, pigs' tusks, antelope's feet and horns by men. The men do not wear their bodies, but women indulge in long linear keloids which form lozenge patterns on the abdomen; they also have initiation belts scarred round the waist. Red and mauve clay mixed with palm-oil are used as pigment; some women paint imitation moustachios and beards with soot on their faces; the meaning of this could not be ascertained.

FIG. 1.—HOUSE AND GRANARY.

The villages of the Babunda are very beautiful; some of them (like Alela) are situated in groves of palms while others (like Mokulo) spread out over an immense area, each hut being surrounded by the plantation of the owner; this is the practice in the majority of cases. The huts are extremely neat and picturesque. They are nearly square, and the walls, about 5 feet high, are made of grass or palm leaves; the latter are sometimes interwoven. The roof is of grass coming to a point about 9 feet high, and the summit is often ornamented with basketwork. The most characteristic feature is the entrance, which is 3 feet above the ground, and is flanked on the sides by round wooden columns, above which there is a semi-circular porch, formed of the material of which the hut is built. The door is closed from inside with a mat. In front of the door, at a height of about 2 to 3 feet,

there is a platform made of palm-leaf midribs and supported on stout poles. The house of the chief is enclosed with grass walls pierced for a small entrance at a height of about 2½ feet. Apart from these orthodox houses there are some other rectangular huts with doors on the ground level; these are not kept so tidily as the others, and I suspect that they are the habitations of the slaves. Bachelors have each their own house; on marriage they have to build a new one in the village to which the wife belongs; a polygamist will thus have several houses situated in various villages, in each of which one of his wives lives with her children. Granaries are found in great numbers; they are cylindrical, much smaller than the dwelling-houses, and slightly raised on piles.

The principal occupation of the men is trade; all negroes are keen traders, but, with the exception of the Badjok, none give more of their time up to commerce than the Babanda. Great markets are held every eleventh day on some spot on the plains equi-distant from a number of villages, and both sexes muster to them in full force. Strangers, especially Europeans, are very unwelcome, as we experienced when we unexpectedly came across one in the course of our wanderings; all information concerning them was refused to us, but we were told that credit was never given. Were we suspected of wanting to make purchases on "tick"? Who knows! The principal articles of export are: agricultural produce (in very considerable quantities), palm oil, live stock and cloth; imports: iron and slaves. Besides these big markets small markets are held in the villages every four days for the bartering of all sorts of commodities.

Besides attending to business, the men weave, embroider, build the houses, obtain palm wine from the chair (*Mano*) and the raphia vinifera (*Kwach*), hunt, make baskets of a special kind (or plait them of string, see Sir Harry Johnston, *George Grenfell and the Congo*, p. 801), carve cups, and fight the battles of the village or the tribe.

The women look after the children, cook, attend to the fields, make baskets (different from those made by men), and fish with baskets in the small rivers. The men shoot fish with bows and arrows at night, attracting them by the flare of torches. The smith, who occupies a high social position, produces iron from the ore and manufactures the various implements: remarkable among these are the highly finished swords of a counter-changed ogee pattern. (*See Journ. Roy. Anthr. Inst.*, 1907, Pl. XVII.) They say that they have learned metallurgy from the Awana, a tribe on the left bank of the Kwilu.

Hunting is rather an insignificant affair, as the bigger kinds of game are absent in the northern part of the country, and the sportsmen have to be satisfied with such small fry as birds, rats, etc., which they shoot, in a stooping position, with bow and arrow; further south, the whole village unites for an expedition and the game is bolted by firing the grass. The first man to hit the quarry is the owner, but the chief is entitled to one hind leg.

Flintlock guns are beginning to be introduced. The art of navigation is in its infancy, as the greater part of the country is devoid of rivers of any importance; on the banks of the Kwilu most primitive rafts of three or four logs tied together are propelled by paddles made of a stick to the extremity of which a few shorter sticks are tied crossways. There is always some war going on; it may be with a neighbouring tribe, between two villages, or even between two sections of the same village.

There is scarcely ever a great market held which does not end in a fight between two hostile factions. The bow and arrow are the weapons mostly relied upon (the same as used for hunting), but when the enemies come to close quarters the swords come into play, and they are terrible weapons too. When two villages

have a difference, the signalling drum summons all males, including boys from the age of twelve or so; the chief takes command, and is advised by the old men. The two armies meet in the plains and, when they are within hailing distance, insult each other with the vilest invectives. The war may drag on for some length of time, until the aggrieved village finds that the number of enemies slain is sufficient to compensate it for the injury or affront which was the cause of the hostilities. On the whole the casualties are small.

As the crops of the field belong to the woman who tilled it; it is her duty to feed her husband and her children. The staple food of the Babunda is millet (*Mazunga*); cassava (*Rolobol*) and maize are only planted in smaller quantities. Bread is made by stirring the flour into boiling water till it forms a stiff pudding. For frying palm oil is used. The Babunda do not like to kill their fowls, so they are generally only eaten when they have died a natural death, when both sexes partake of them; occasionally, however, a wing is cut off a live animal so as to provide a festive meal; the chickens so amputated generally recover. Goats are killed on market days and sold in small pieces; these are preserved till they are high before they are consumed. Dogs and snakes, eaten freely by men, are taboo to women. The cooking is done by women, who practically never clean the vessels. The cook takes first what she wants and the rest is for her lord and master; in case of a conjugal difference he is punished through the stomach. The host always eats before his guest; meals are generally taken in the evening. Cannibalism is unknown. Kola nuts are used as a stimulant and to induce thirst; they are offered as a sign of goodwill to visitors. The only narcotics used are hemp and tobacco. The Indian hemp plant is found in quantities in the villages; tobacco, too, is grown near the habitations, probably to prevent pilfering. The latter is smoked and snuffed; the snuff is similar to that of the Bambala and is prepared in the same way.*

The following domestic animals are kept: chickens, goats, black pigs, dogs, and cats. Fowls are provided with tiny houses and pigs with enclosures, into which they are driven nightly; cats and dogs share their master's house, while the goats have to shift for themselves. The latter are killed by a blow from the long wooden sword which is used by the Babunda in guise of a walking-stick. Castration is practised on chickens, goats, pigs, and dogs.

Domestic animals are used as currency: taking as the unit the bag of native salt, they represent: goat, 20–60; pig, 50–70; fowl, 1. One salt is the same value as a roll of native cloth (*Mobula*). The value of cattle compares favourably with that of a wife (30 salts), a male (170) or female (200) slave.

Slaves are only possessed by men, who can sell them whenever they like, but they cannot put them to death; their number is great and most of them seem to be Babunda. They may be so from birth, a child following its mother's status whatever the father may be, or they may have become so as a punishment for theft or rape or as a compensation for an unpaid debt. But we were assured that it was not the offender himself who was sold into slavery but his brother. The slaves are well treated and provided with wives by their owner, who often marries them into his own family; though in theory their earnings belong to their master, in practice they generally receive a considerable part; this they can use to redeem themselves. A man is always responsible for any possible debts of his slave. Slaves are inherited like other property, a man's heir being his eldest living brother, failing him, his eldest living sister, failing her, the eldest sister's eldest son, and so on. Widows are inherited with other property, and so is the chieftainship, except that a female cannot assume that rank.

* *Journ. Roy. Anthr. Inst.*, 1905, p. 405.

Few chiefs have any great authority, though the administration of justice lies in their hand. They receive no pay from the contending parties, but are generally disposed to tilt the balance of justice for a consideration. Blood revenge is recognised. The usual punishment consists of fines, of being sold into slavery; capital punishment is not inflicted openly, but a chief may kill an incorrigible rogue by witchcraft. Drunkenness is not admitted as an excuse, and is not approved of; the brother of a drunkard will forbid the palm wine sellers to supply him, and if they disregard his warning he will smash all their calabashes. In case of murder by an inhabitant of another village the community will claim an indemnity of ten slaves for the benefit of the victim's heir, and in case of non-payment, enforce it by war. A village will thus protect its members, the membership being acquired by birth in the village, or by marriage with one of the girls belonging to it.

To be a member of the tribe one has to be the child of a Mombanda woman, for a person considers himself akin to his mother's family, and not to his father's. Besides this kinship there is an age-kinship recognised between people born within the same period, the length of which we could not establish; this is an obstacle to marriage.

No persons who can trace a common ancestry are allowed to marry. If a youth desires to marry a girl, he will call on her parents and present them with some palm wine; he will pay several visits like this without ever mentioning the real object of his assiduity. If his courtship is viewed favourably by the parents they will ask him to eat with them; this practically means consent, though the bride has the last word in the matter. Should she refuse, the disappointed lover will claim the return of his palm wine. If, however, things go well, the bridegroom will proceed at once to build a house in the girl's village, and, the bride price (30 salts) having been duly paid, the mother hands the bride over without any further ceremony. Some Babanda marry out of their tribe, but even then the rule is observed that the husband has to take his abode in the village of his elect. Polygyny is rare among the ordinary people, but chiefs generally have several wives. A man cannot marry his own slave. Both parties can divorce at will; if the husband repudiates his wife, he is entitled to no damages, except if his wife re-marries, when he has a claim on the second husband; if it is the wife who abandons her husband, her family have to reimburse the bride-price. In case of divorce, the first child goes with the father, the second with the mother, the next with the father, etc. If the wife dies before a child has been born, her parents refund the bride-price, or provide another wife gratis; it is the husband who decides if he wants the money or a bride; if, however, the deceased wife leaves a child, the husband cannot choose, but has to take another wife.

Virginity cannot be expected in the bride as girls are allowed to indulge freely up to the age of puberty. It is the custom of the country that about the period when the millet ripens (May) the young men of each village should club together to obtain a *Mombanda*. The *Mombanda* has to be a girl under the age of puberty, a stranger to the village, and she has to prostitute herself with all the young men in turns, but there are days when orgies take place and all the men have intercourse with her. On these special days the *Mombanda's* mother provides food and palm wine for the young men; it is she who receives the payment, which consists, for the term of its duration (two lunar months), of fifty to sixty "salts" per man. Not all young men contribute, as there are some who cannot afford it; only contributors enjoy the privileges, and it is "good form" to belong to this set. Not only does the fact that a girl has been a *Mombanda* not prejudice her chances of marriage, but it is considered a distinction; no girl can be a *Mombanda* more than once. Should she die while she is in this position, her village is entitled to heavy

damages. The girl, as mentioned before, wears a very short skirt, and her hut is distinguished from all others by being painted red and white in triangular patterns.

On the whole the moral code of the Babunda corresponds to that of civilised communities, though a distinct difference is made between a tribesman and a stranger; the latter is a legitimate object of exploitation and extortion. Yet hospitality is due to him, and a village which were not to offer it would acquire an undesirable reputation.

Adultery is considered a personal offence. The guilt of an offender is frequently established by ordeal; this may be done in the old Bunda way, by giving a small quantity of *epumi* (a decoction of the bark of *Erythrophlæum Guineense*) which, if it acts as a vomitive, proves innocence, while if it produces diarrhœa confirms the charge. Nowadays, however, another test, learned from the Bapinji, is used: the suspected person has to fish a pebble out of a pot of boiling oil; damaged skin proves guilt.

In case of witchcraft, the accused has always to undergo the test by epumi, which is then given in a deadly dose. It is to witchcraft (*Molochi*) that deaths without apparent reasons are attributed, that is to say, when they occur without violence or palpable disease.

A dying person is surrounded by his family. The corpse is ornamented with beads, wrapped in cloth, and buried without a coffin in the plains. The graves are marked with a stick and some pots, and no trouble is taken to keep them in a good state, consequently they are in a short time overgrown with bush. Yet the memory of the dead is cherished, and the first fruit is sacrificed on their graves, and no person will think of eating of the new crop before having satisfied the demands of the dead. The whole village laments the decease of an inhabitant for several weeks. The corpse is laid flat on his back in the grave turning eastwards. The soul, *N'tim* (literally "liver"), dies with the body (the image appearing in dreams is the *Dushi*, the shadowy second self), and a *Molochi* kills his victim by devouring his soul. Sometimes it happens that the soul does not die with the body; then it turns into a ghost, *Monchongo*, and it is the duty of the magician (*Houli*) to lay this. The *Houli* is a person of importance, and often a chief. He learns his trade as a boy, and has to pay two fowls to his teacher as soon as the apprenticeship begins; having acquired the more elementary part of his art, he has to pay a goat (the liver of which he eats), and finally he has to give his master thirty salts to be taught the deepest secrets of the profession. Then his power is great; he can manufacture the magical clay which, if smeared on the wooden images, will protect the owner of them, and he can kill a man, and is often asked to do so to satisfy some vengeance. He practises medicine, and is an adept at bleeding.

The Babunda are fond of music, and sing exceedingly well; as a matter of fact, better than any other tribe in the Congo. They never shout and scream in negro fashion, but use their velvety voices with moderation, and are capable of singing in perfect harmony; while they are doing so their bellies perform a circular motion corresponding to the time of the tune. We never heard the women sing. Their instruments are: the wooden whistle (a kind of wooden horn consisting of a simple hollow cylinder), ocarinas, the sanza, the musical bow with calabash resonator, drums, the friction drum, and the wooden gong. Specimens of all these have been collected for the British Museum. There is a specially interesting rattle, which I propose to call the switch-rattle, which consists of the midrib of a palm leaf, half hollowed, and with teeth like a saw cut into the two edges; over these edges a bundle of switches is drawn with a rapid motion, and the sound thus produced. This instrument is only played at funerals in front of the deceased's house.

Mutilations: Circumcision is general, and performed by old men on infants. All incisor teeth are filed.

Fire is now generally produced by flint and iron, a method learned from the Bambala.

The Babunda greet each other by one person saying, *Ju* (peace), and receiving the answer, *Ju*. Then the first asks, *Kalebala bile?* (No war?), and the answer is the same.

The year is divided into the rainy and dry seasons (*Vula* and *Kishu*), and the months are called first of Vula, etc. The East is called sun-rise, and the West "where the sun goes to ground"; the sun is supposed to return to the East behind the sky during the night.

There is one village, Musoto, where the children play with little water-squirts made out of hollowed sticks: the inhabitants claim the invention of this toy, and do not like to sell any to strangers.

The Northern Babunda inhabit in the Belgian Congo the region between the middle course of the Kwilu and Luboe rivers, and are in contact in the North with the Badingu, the East with the Begoode, the South with the Bapinji, and the West with the Bahwese and Southern Bambala. E. TORDAY.

Europe: Witchcraft. Murray.

Witches' Fertility Rites. *By M. A. Murray.* **27**

The sexual ritual of the witches assumed enormous importance in the eyes of their judges and of the contemporary recorders; consequently, the accounts of these acts are given with much greater detail than is generally the case with other parts of the religious ceremonies. Since the days of Reginald Scot it has been the fashion of all those writers, who disbelieved in the magical powers of the witches, to point to the details of the sexual intercourse between the Devil and the witches as proof positive of hysteria and hallucination. This is not the attitude of mind of the recorders who heard the evidence at the trials. "Les confessions des Sorciers, "que l'ay eu en main, me font croire qu'il en est quelque chose: dautant qu'ils ont "tous recognu, qu'ils auoient esté couplez avec le Diable, et que la semence qu'il "iettoit estoit fort froide: ce qui est conforme à ce qu'en rapporte Paul Grillaud, "et les Inquisiteurs de la foy."* "It pleaseth their new Maister oftentimes to "offer himselfe familiarly unto them, to dally and lye with them, in token of their "more neere conjunction, and as it were marriage unto him."† "*Witches* confessing "that the Devil *lies with them*, and withal complaining of his tedious and offensive "*coldness*, it is a shrewd presumption that he doth lye with them *indeed*, and that "it is not a meer *Dream*."‡

It is this statement of the physical coldness of the Devil which modern writers adduce to prove their contention that the witches suffered from hallucination. Yet in trial after trial, in places far removed from one another, and at periods more than a century apart, the fact is vouched for with just the small variation of detail which shows the actuality of the event. When the witch admitted having had sexual intercourse with the Devil, in a large proportion of cases she added, "The Devil "was cold and his seed likewise." These were women of every class and every age, from young girls to old women, unmarried, married, and widows. Such a mass of evidence cannot be ignored, and in any other subject would obtain credence at once; but the hallucination theory, being the easiest, appears to have obsessed the

* Boguet: *Discours des Sorciers*, p. 68.

† Cooper: *Mystery of Witchcraft*, p. 92.

‡ More: *Antidote against Atheism*, p. 241.

minds of modern writers to the exclusion of any attempt at explanation from an unbiassed point of view.

"Sacred marriages" are explained as an attempt to influence the course of Nature by sympathetic magic, fertility being increased and barrenness averted thereby. This explanation accounts very well for the occurrence of "obscene" rites among the witches, but fails when it touches the question of the Devil's coldness. I offer here an explanation, which I believe to be the true one, as it accounts for the facts; those facts, which the women confessed voluntarily and without torture or fear of punishment, like Isobel Gowdie, or adhered to as the truth even at the stake amid the flames, like Jane Boedeau.

In ancient times the Sacred Marriage took place usually once a year, but there were, besides, other sexual rites performed in the precincts of the temple, the males being the priests or temple officials. Such rites were for the increase of fertility; and as there is overwhelming evidence that the man who was known as the "Devil" was regarded by his worshippers as the incarnate deity and giver of fertility, it is clear that the ceremonies of the witches' Sabbaths were the continuation of a very ancient ritual. Believing as they did that such intercourse would increase the fertility of their crops and herds, the women would insist upon it as their right, probably at certain specified seasons, such as the breeding periods of the herds and the sowing or harvesting periods of the crops. As the population, and therefore the number of worshippers in each "congregation," increased, it would become increasingly difficult, and finally impossible, for one man to comply with the requirements of so many women.* The problem, then, was that on the one hand there were a number of women demanding what was in their eyes a thing essential for themselves and their families, and on the other hand a man physically unable to comply with all the calls upon him. The obvious solution of the problem is that the intercourse between the Chief and the women was by artificial means, and the evidence at the trials points clearly to this solution.

The occasional descriptions of the Devil's phallus shows without question its artificial character: "Es sagte die Alexia Dragon ihre Buhschaft hätte einen Glied "so starken als allezeit gehabt, wenn ihm gestanden, und so gross als eine Ofen-"Gabel-Scheit, dasgleich sie zugegen zeigte, dann ohngefähr eine Gabel zugegen "war, sagte auch wie sie kein Geleuth weder Hoden noch Beutel daran gemerckt "hat."† Among the witches of the Lyons district in 1598: "Isquema Paget "adioustoit qu'elle auoit empoigné plusieurs fois auec la main le membre du Demon, "qui la cognoissoit, et que le membre estoit froid comme glace, long d'vn bon "doigt, et moindre en grosseur que celuy d'vn homme. Thieuenne Paget et Antoine "Tornier adioustoit aussi, que le membre de leurs Demons estoit long et gros, "comme l'vn de leur doigt."‡ According to the witches of the Pays de Labourd in 1609, "Il a au deuant son membre, tiré et pendant, et le monstre tousiours long "d'vn coudée.—Le membre du Diable s'il estoit estendu est long enuiron d'vne "aulne, mais il le tient entortillé et sinueux en forme de serpent.—Le membre du "Diable est long enuiron la moitié d'vne aulne, de mediocre grosseur, rouge, obscur, "et tortu, fort rude et comme piquant. Ce mauuais Demon ait son membre myparty, "moitié de fer, moitié de chair de tout son long, et de mesme les genitoires. Il tient "tousiours son membre dehors. Le Diable a le membre faict de corne, ou pour le

* Jonet, Lucas at Aberdeen, 1597: "The Deuill your maister hald carnall deall with ilk ane of yow." *Spalding Club Misc.*, I, p. 149. Barthélemy Minguet de Beuy, 1616: "Le Diable se "conioint charnellement auec toutes les femmes qui sont au Sabbat les vnes apres les autres." De Lancre, *L'Incredulité*, p. 808.

† Remigius: *Daemonolatreia*, Ch. VI, p. 21. Alexia was tried in Lorraine in 1589.

‡ Boguet, pp. 68-9.

" moins il en a l'apparence ; c'est pourquoy il faict tant crier les femmes."* At Auldearne, "his memberis ar exceiding great and long ; no man's memberis ar so " long and bigg as they ar."†

The artificial phallus will account as nothing else can for the pain suffered by many of the women ; and that they suffered voluntarily, and even gladly, can only be understood by realising that they endured it for motives other than physical satisfaction and pleasure. Jane Boudeau, in Puy de Dôme, in 1594, said that "there " appeared a great *Black Goat* with a *Candle* between his Horns. He had carnal " knowledge of her which was with great pain."‡ According to Boguet, "Presque " toutes les Sorcieres rapportent que cet accouplement, leur est le plus souuent des- " agreable, tant pour la laideur et deformité de Satan, que pour ce qu'elles y ont " vne extreme douleur."§ Jeannette d'Abadie, in the Pays de Labourd, "fayoit " l'accouplement du Diable, à cause qu'ayant son membre faict en escailles il fait " souffrir vne extreme douleur." In the same district at the Sabbaths the Devil took the woman behind some kind of a screen, and the children "les oyent crier " comme personnes qui souffrent vne grande douleur, et ils les voyent aussi tost " reuenir au Sabbat toutes sanglantes." When the Devil exercised the right of the *jus primæ noctis*, "au cet accouplement il leur faict perdre vne infinité de sang, et " leur faict souffrir mille douleurs."‖ Widow Bush, of Barton, said that the Devil, who came to her as a young black man, "was colder than man, and heavier, and " could not perform nature as man."¶

The physical coldness of the Devil is vouched for in all parts of Western Europe, and is mentioned in about 75 per cent. of the trials. I give only two quotations. Boguet states that "toutes les Sorcieres s'accordent en cela, que la " semence, qu'elles reçoiuent du Diable, est froide comme glace. Sprenger, et les " Inquisiteurs, qui en ont veu vne infinité, l'escriuent ainsi. Remy qui a fait le " procez à plus de deux milles Sorciers, en porte vn temoignage irrefragable. Ie " puis asseurer au semblable, que celles, qui me sont passées par les mains, en ont " confessé tout autant. Que si la semence est ainsi froide, il s'ensuit qu'elle est " destituée de ses esprits vitaux, et ainsi qu'elle ne peut estre cause d'aucune gener- " ation."** Isobel Gowdie and Janet Breadheid said that the Devil at Auldearne was "a meikle, rock, blak man, cloven footed, werie cold ; and I fand his nature " within me als cold as spring-well-water. He is abler for wa that way than any " man can be, only he wes heavie lyk a malt-sack ; a hudig nature, verie cold, as " yee."††

Another point which goes to prove that the intercourse was by artificial means was that pregnancy did not follow, except by special consent of the woman. Jeannette d'Abadie, whose evidence has been quoted above, said : "Elle fayoit " l'accouplement du Diable, à cause qu'ayant son membre faict en escailles il fait " souffrir vne extreme douleur ; outre que la semence est extremement froide, si " bien qu'elle n'engrosse iamais, ni celle des autres hommes au sabbat, bien qu'elle " soit naturelle."‡‡ Boguet says that Antoinette Ternier and Antoinette Gandillon, " estans interroguées, si elles craignoient point de deuenir enceintes des œuures du " Diable ; l'vne respondit qu'elle estoit trop vieille ; l'autre que Dieu ne le voulut

* De Lancre : *Tableau*, pp. 68, 224–6.
† Pitcairn : *Criminal Trials*, III, p. 617
‡ Hutchinson : *Historical Essay*, p. 52
§ Boguet, p. 69.
‖ De Lancre, pp. 180, 219, 404.
¶ Sinclair : *Confirmation*, p. 29.
** Boguet, p. 92.
†† Pitcairn, III, pp. 606, 617.
‡‡ De Lancre, p. 180.

" pas permettre."* According to Jeanne Hervillier, the Devil "coucha auec elle " charnellement, en la mesme sorte et maniere que font les hommes auec les femmes, " horamis que la semence estoit froide. Cele dit elle continua tous les huict ou " quinze iours. Et va iour le Diable luy demanda, si elle vouloit estre enceinte de " luy, ce qu'elle ne voulut pas."† But when the witch was willing to have a child, there is an complaint of the Devil's coldness. At Maldstone, in 1652, "Anne " Ashby, Anne Martyn, and one other of their Associates pleaded that they were " with child pregnant, but confessed it " was not by any man, but by the " Divell. Anne Ashby and Anne " Martyn confessed that the Divell " had known them carnally, and that " they had no hurt by it."‡

M. A. MURRAY.

HEIRLOOM OF BRAIDED HAIR.

Alaska. Gordon.

A Head Ornament of Braided Hair from Alaska. 28

By Dr. G. B. Gordon.

This is a very remarkable piece of work, and must have required infinite time patience, and industry. Only one half of the ornament is shown in the photograph. It is made up of fine braids, 36 inches in length, very dark brown, and a very fine texture. Each braid is composed of from twenty to twenty-five hairs, and each hair enters singly into the braid. It was an heirloom in the family of the Chief of the Wolf House at Sitka. Tradition says that the ornament was made from the hair of a daughter of this house who was famous for her beauty. She married Taxea, a Prince popular in the traditions of Sitka, who, in his youth, became singing director at a great gathering held in the lady's home town. To show her affection for the Prince she had her hair cut off at the waist line, and the ends thus removed were braided into this ornament. This is now in the collections in the University Museum, Philadelphia, having been sent recently by Mr. Louis Shotridge, the highly intelligent Indian Chief who has been conducting an expedition in Alaska, for the museum.

G. B. GORDON

* Bogtet, p. 78.
Bodin: *Fléau des Demons*, p. 227.
† *Prodigious and Tragicall History*, p. 4.

Central America: Chronology. Long.

The Date of the Maya Ruins at Santa Rita, British Honduras. 29

By Richard C. E. Long.

In the Nineteenth Annual Report of the Bureau of American Ethnology (Smithsonian Institution) is an account by Dr. T. Gann of his excavation of the above ruins, with three plates of the wall paintings. These paintings seem to show considerable Nahuatl influence, but contain some Maya glyphs. The day sign Ahau with the usual bar and dot numerals attached is unmistakable. Dr. Gann considers that some of the other day signs are depicted, but this is not so certain as in the case of Ahau, because the signs he takes to be Manik vary considerably from the usual form, and the remaining signs are all compounded with others, so that it seems very doubtful if they are here used as day signs. Plate XXIX of his paper shows ten human figures, numbered by him from left to right. This numeration will be followed in the present paper, and the various human figures in the Plate will be referred to by his numbers as No. 1, &c. The day sign Ahau, with its Maya numerals, occurs as follows:—

No. 1.—No Ahau sign.
No. 2.—1 Ahau above the figure.
No. 3.—No Ahau sign.
No. 4.—9 Ahau above the figure.
No. 5.—13 Ahau at the back of the figure's head.
No. 6.—4 Ahau below the waist of the figure in the skirt of its clothing.
No. 7.—8 Ahau over the bound hand of the figure between it and No. 6.
No. 8.—12 Ahau over the arm of the figure.

There are no Ahau signs with the remaining figures.

The first thing to be noticed is that from No. 4 to No. 8 the day number of Ahau regularly increases by 4. Of course 4 Ahau at No. 6 is (13 + 4) − 13 = 4, because the day number cannot rise above 13. If there had been a 5 Ahau with No. 3 the sequence would be complete, giving an increase of 4 in the day number throughout. Now in the Maya time system the day numbers of successive *tuns* decrease by 4, giving the sequence 13, 9, 5, 1, 10, 6, 2, 11, 7, 3, 12, 8, 4, and then 13 again. This makes it probable that the painting shows a series of consecutive *tuns* running backwards in point of time from left to right, since the day numbers increase by 4 instead of decreasing. As these *tuns* end on the day Ahau it is a reasonable supposition that they are *tuns* of the Long Count, but as each day number returns at the end of every 13th *tun*, roughly every 13th year, this in itself does not fix the date of the inscription. Now no months appear with this series of days Ahau except with 8 Ahau at No. 7. Here there is a glyph which appears to be the month Yax turned on its side and having the numeral five represented by the usual bar. The glyph has the usual superfix found only with Yaxkin and Yax, while the remaining part of the glyph is certainly not that of Yaxkin, and is like the Cauac sign which makes up the lower part of Yax. There is no other day sign which it could belong to except the 8 Ahau. But here two difficulties arise. The first is that the month glyph is over the day glyph instead of the usual position at the right or beneath. On the whole, however, as this is not a continuous text, but rather a group of signs scattered through the pictures as in some parts of the Codex Tro-Cortesianus, it seems correct to take the month as belonging to the 8 Ahau. The second difficulty is that the month day is 5, while Ahau can only fall on the month days 3, 8, 13, or 18. If, however, we assume that the three dots which should raise the value of the numeral to 8 were either omitted by error or had become obliterated, we would have a date 8 Ahau 8 Yax. Now, though in a continuous series a *tun* ending again with the same day number will occur every

13 *tuns*, there will only be a *tun* ending again on the same day of the same month every 73 *tuns*, and there will only be one ending again on the same day of the same month and with the same day number after the expiration of 949 *tuns*, or 936 years of 365 days. Hence, only after the expiration of this long period will a *tun* ending on 8 Ahau 8 Yax again occur.

The earliest "historical" Maya date inscribed on a monument, that on Stela 3 at Tikal, is (using same methods as in my former papers, MAN, 1918, 70 and 74) 9-2-13-0-0, 4 Ahau 13 Kayab (12 July 42 A.C.). The Maya culture closed with the *katun* 11 Ahau, that is 13-3-0-0-0, 11 Ahau 8 Kayab (6 June 1543). It is certain that the Santa Rita ruins must be dated somewhere between these very wide limits. But the date 8 Ahau 8 Yax only occurred twice at the end of a *tun* of the Long Count during the whole of that period, namely, on 10-6-0-0-0, 8 Ahau 8 Yax (25 Oct. 419 A.D.), and on 12-13-9-0-0, 8 Ahau 8 Yax (5 March 1355). This can be easily verified, as far as the *tun* endings are concerned, by Mr. J. T. Goodman's tables.

It is rather tempting at first to assign the earlier date to the ruins, because the books of Chilan Balam speak of the discovery of Bakhalal or Bacalar in *katun* 6 Ahau, that is in 10-7-0-0-0, 6 Ahau 8 Tzec (14 July 439 A.D.), and Bacalar is very near Santa Rita, so that we might suppose that some branch of the Mayas was established here only twenty years before. On the whole, however, the marked Nahuatl influence which appears in the paintings points to a late date. The date 12-13-9-0-0, 8 Ahau 8 Yax (5 March 1355) would fall well within the period when Nahuatl influence is known from the books of Chilan Balam to have existed, namely, from the fall of Chichen Itza in *katun* 8 Ahau that is 12-5-0-0-0, 8 Ahau 3 Pax (8 Aug. 1188) to the fall of Mayapan, in *katun* 8 Ahau, equivalent to 12-18-0-0-0, 8 Ahau 18 Tzec (12 Nov. 1444). It is also very close to the date which Dr. Gann on other grounds considered probable for the erection of the temple, namely, the end of the fourteenth or beginning of the fifteenth century. If, then, the interpretation of the text above given is correct, the later date may be taken to be the true one.

It is worthy of note that it is only by using Mr. Bowditch's correlation of Maya and Christian chronology that so probable a date as this is on stylistic grounds, can be reached for Santa Rita. Whatever correlation with dates in the Christian era is used, the two possible dates of this inscription in the Long Count will, of course, be the same. If Mr. Morley's correlation is used, which puts the dates of the Long Count at 13 *katuns* (about 256 years) later in the Christian era than Mr. Bowditch's, the result will be that 10-6-0-0-0, 8 Ahau 8 Yax, will fall in A.D. 676 and in *katun* 8 Ahau, just before the taking possession of Chakanputum according to the books of Chilan Balam. This is long before there was any Nahuatl influence on the Mayas so far as is known, and it is long after the discovery of Bacalar, so there is no probability of any kind that it was the date of Santa Rita. The other alternative date, 12-13-9-0-0, 8 Ahau 8 Yax, will fall in 1611, long after the Spanish Conquest. If any of the correlations suggested by other students be used, the results for Santa Rita will be still wider of the mark.

The following table gives the dates attached to the several figures in the Santa Rita wall painting according to above interpretation:—

No. 2.—12-13-14-0-0, 1 Ahau 3 Chen (9 February 1360).
" 4.—12-13-12-0-0, 9 Ahau 13 Chen (19 February 1358).
" 5.—12-13-11-0-0, 13 Ahau 18 Chen (24 February 1357).
" 6.—12-13-10-0-0, 4 Ahau 3 Yax (29 February 1356).
" 7.—12-13-9-0-0, 8 Ahau 8 Yax (5 March 1355).
" 8.—12-13-8-0-0, 12 Ahau 13 Yax (10 March 1354).

These dates are in the Julian calendar, the error of which in 1354 was ten days, so that 10 March is equivalent to 20 March Gregorian, that is within a day of the vernal equinox. This affords an additional proof of the correctness of the interpretation, because the majority of "historical" Maya inscriptions seem to have rather commemorated dates which were important astronomically or calendrically than dates of historical events in the ordinary sense. No doubt, however, the dates of important events were noted as well.

A word in conclusion on period-ending dates in general, as to which I venture to differ from so eminent an authority as Mr. Bowditch. It has been shown above that such a date as 8 Ahau 8 Yax, if it is known to be the ending day of any *tun*, cannot again occur in the Long Count as the ending day of a *tun* for 949 *tuns* or 936 years. This is a different case from the usual period-ending dates, which state, *e.g.*, that 8 Ahau 8 Yax ended 9 *tuns*. In these latter, according to Mr. Bowditch (*The Numeration Calendar Systems and Astronomical Knowledge of the Mayas*, p. 177), the date cannot occur again for 949 *tuns*. But surely when the *tun* number (in this case 9) is stated it gives the distance from the end of the previous *katun*, and consequently that *katun* ending can be found, so that the date cannot occur again for 949 *katuns* (18,720 years) instead of 949 *tuns*. In fact, it can be shown by Goodman's tables that no *tun* 9 of any *katun* will end again on 8 Ahau 8 Yax for 949 *katuns*. A similar remark applies to such period-ending dates as, *e.g.*, 8 Ahau 8 Yax, ending 6 *katuns*. Here, according to Mr. Bowditch, the date cannot occur again for 949 *katuns*, but it is evident that the *katun* number (6 in this case) gives the distance from the end of the previous cycle, so that the date cannot occur again, ending a *katun* 6 of any cycle for 949 cycles (374,400 years) instead of 949 *katuns*. And similarly when a date is stated to end a given number of cycles, as in Mr. Bowditch's example, 2 Ahau 3 Uayeb ending two cycles, the cycle number 2 gives the distance from the end of the previous great cycle, so that the date of the great cycle ending day can be found and the date cannot again occur ending cycle 2 of any great cycle for 949 great cycles of 20 cycles each, a period equal to 7,488,000 years.

RICHARD C. E. LONG.

REVIEWS.

Asia Minor: Ethnology. Ramsay. 30

The Intermixture of Races in Asia Minor. By Sir W. M. Ramsay. (*Proceedings of the British Academy*, Vol. VII.)

At the present time, when the fortunes of Asia Minor, as well as those of the remainder of the Turkish Empire are to be decided, the paper read two years ago before the British Academy on the Admixture of Races in that country is of great interest, and deserves careful study by the statesmen who hold great issues in their hands, and by all who desire to obtain some insight into the involved mass presented by the ethnological problems of that much-invaded region.

Asia Minor, as Sir W. Ramsay has reminded us in a recent paper read before the Central Asian Society, has been from the earliest days of history the bridge, in practice almost the only bridge, between Europe and Asia, and, in fact, if we except the movement of the vast Hunnish hordes, it has retained that character until very recent times. Hence the invasions of powerful empires and of migratory tribes pressing from east to west and occasionally from west to east. Most of these have left some trace on the population. One of the most marked features of this population is the extraordinary number of communities of obviously distinct origin living in small bodies isolated from their race-fellows, yet remaining distinct and separate and not intermarrying with their neighbours. Some are relics of conquered

races, some fragments of invading tribes, but with very few exceptions they do not form bodies capable of political independence, and for the great majority the only hope is a strong central government capable of ruling by civilized methods, and this privilege they have been denied ever since the fall of the Byzantine Empire, with the doubtful exception of a short period under the Seljuk Turks. Under the Ottoman Turks their fate has perhaps been worse than under any other rule, and it is permissible to hope that the Peace Conference, followed by the League of Nations, may be able to devise some scheme which may restore prosperity to their magnificent country. The Arabs to the south and the Armenians to the east are promised autonomy under powerful protection, but what is to happen to the races of Asia Minor, and to the true Turks themselves, who have suffered almost as much in some ways as the other races, Christian or Muhammadan, who inhabit Asia Minor. The Greeks alone—at any rate, those of them who inhabit the provinces bordering on the Ægean—may certainly look forward to union with their kinsmen, but, as stated above, no other race in Asia Minor, except the Turks themselves, counts politically. This is Sir W. A. Ramsay's opinion, formed after a very long personal study of the question. And a very large number of persons who go by the name of Turks or Osmanli are not really Turks by blood, but belong to one or other of the numerous scattered races of Anatolia. The process of converting them into Osmanlis has been going on vigorously, as Sir W. Ramsay shows, both under Abdel-Hamîd and under his successors, the so-called Young Turks.

Other races more nearly akin to the Turks yet distinct from them, such as the Turkmân (or Turkmen as Sir W. Ramsay calls them), the Yuruk and the Avshahr, sharing a common language are most easily assimilated, and Sir W. Ramsay considers that the transition from the nomadic to the settled stage may be considered as almost equivalent to becoming Osmanli. But the settled Turks themselves he holds to be a mixed race descended from the invading Turks and the Anatolian Christians whom they conquered. Among these was a large number of sects regarded as heretical, who were very harshly treated by the orthodox, and Sir W. Ramsay thinks that this population largely embraced Islâm in self-defence. This theory deserves careful examination on historical evidence if any is forthcoming.

Attention may also be drawn to the very useful account of the Jews in Asia Minor, and the enquiry as to how far the ancient settlements of Jews under the Seleucidæ and Romans are to be recognised in the modern Jewish population, which is generally held to be mainly derived from Western Europe, especially Spain. It is impossible to do more than hint at the many questions raised in this very useful and important paper, which is, as stated above, of especial value at the present time, when possibilities which may not recur for many generations seem open for the interference of civilized Europe on bold and generous lines.

M. LONGWORTH DAMES.

University of Pennsylvania.

The Museum Journal. Vol. IX, Nos. 3 and 4. September-December, 1918. **31**

This is a fine double number, full of excellent illustrations. Theodore de Booy describes his six weeks' visit to the Maiongong, of the unexplored Sierra de Perijá, in Western Venezuela, near the frontier of Colombia. His photographs of these people are remarkably good, showing their various occupations. The peculiar face decoration makes quite a disguise. Without this, the general appearance of the men suggests an African type grafted on the American. Fortunately, they liked being photographed. They are "quite unlike the majority of other South American aborigines." The average height of the men is 5 ft. 1 in., and of the women

4 ft. 8 in. They wear full robes of homespun cotton, grown on the mountain slopes, and woven on a primitive loom. They do not use hammocks, but sleep on plaited straw mats laid on the ground. For weapons they have only bows, with several varieties of arrows, the points made from hoop iron. This they obtain through the Taenecus, who communicate with the Spanish Venezuelans. Making string figures is a favourite game, very intricate designs being produced, which were photographed and classified.

Of musical instruments, they have flutes of several kinds, and conch shells, but no drums. Panpipes are played by women only. The same monotonous tunes are played over and over again. Mr. de Booy introduced jews' harps, on which they soon learned to play. He acquired about 350 words and expressions used by the Macoa. An Arawak tribe is said to have previously inhabited this region and to have left many remains, including a burial cave in a remote mountain. Besides bringing away a great ethnological collection, Mr. de Booy secured a quantity of potsherds, stone axes, mortars, etc., from an ancient hill-site near La Horqueta, two days' ride from Maracaibo.

The museum's unequalled exhibits of Pomo (California) feathered basketry have been further enriched by the late Mr. H. J. Jewett's collection. Several coloured photographs show the wonderful skill in working the minute feathers, so that the surfaces have almost the smoothness of the breast of the bird itself. The baskets covered with red feathers are known as sun baskets, for, according to tradition, it was in such a basket that the sun was stolen from the other world and brought to this. Baskets decorated with yellow feathers are called moon baskets. There are also miniature baskets, one being less than three thirty-seconds of an inch in diameter. Ten very fine stitches sew the uppermost coil.

Two stone reliefs (acquired by the museum) of the horses of T'aeng T'ai-Tsung, a great ruler of China in the seventh century A.D., serve as foundation for an interesting account of early Chinese history and horses, by C. W. Bishop. The horses are finely represented, and their housings are curiously modern. Amongst the illustrations is the handsome cab of the Han dynasty (third century A.D.).

A Kekchi legend (Guatemala), translated by R. Burkitt into a travesty of the English language, would have been more valuable in the original. A. C. H.

ANTHROPOLOGICAL NOTE.

The Mackie Ethnological Expedition to Central Africa. 32

For some years past it has been in contemplation to institute researches into the laws, customs, and beliefs of the native tribes under British rule in Central Africa, particularly in the Uganda Protectorate. All these tribes are in a comparatively primitive state, and some of them have been as yet but little modified by contact with European civilisation. It is believed that a thorough investigation of these interesting peoples will not only make a valuable contribution to the science of man by throwing light on some early phases of the history of society and religion and law, but that it will eminently conduce both to the good government and to the economic development of these vast and fertile regions with their teeming population, for without an accurate knowledge of the habits and ideas of the natives it is impossible to rule them so as to keep them happy, contented, and loyal; and without their willing and active co-operation the material and industrial prosperity of the country cannot be ensured.

As many are already aware, a scheme for the scientific investigation on a large scale of these important problems has been planned and ardently advocated by Sir

James G. Frazer, but hitherto has been balked for want of the necessary funds. This difficulty has at last been happily overcome through the enlightened liberality of Messrs. R. J. Mackie and Co., Glasgow, who have generously placed at the disposal of the Royal Society a sum of 1,500*l.* for the purpose of despatching an expedition to Central Africa to institute the necessary enquiries. The expedition will be conducted by the Rev. John Roscoe, M.A., Rector of Ovington, Norfolk, who, during a residence of twenty-five years in Central Africa, in the service of the Church Missionary Society, has acquired an unrivalled knowledge of the native tribes, their languages, customs, and ideas, and has published the results of his investigations in two books of the highest scientific value (*The Baganda*, London, 1911; *The Northern Bantu*, Cambridge, 1915). His special object on the expedition will be to examine the various pastoral tribes, which form a very important element in the native population, and occupy a wide area from the south-western corner of Lake Victoria Nyanza to the upper waters of the Nile. It is hoped that one result of the examination will be to furnish the Government with valuable materials for its guidance in dealing with the tribes, so as to promote the important industry of cattle-breeding to the best advantage.

The expedition will proceed by Mombasa through British East Africa to the Victoria Nyanza, and through Uganda down the Nile to Khartoum, returning by Egypt. It is hoped that in addition to the pastoral tribes, which will be the principal subject of enquiry, it will be possible to visit and institute enquiries, to a certain extent, also among the Galla, Akikuyu, and the cannibal tribes of Mount Elgon. The time necessary to complete the investigation may be two years. Throughout its progress the expedition will be under the general supervision of the Royal Society, which has appointed a Committee of Management.

Mr. Walter Long, F.R.S., First Lord of the Admiralty, has been invited to act as Chairman of the Committee, and Lord Milner, Secretary of State for the Colonies, has been asked to join it. The Committee includes representatives of the Universities of Oxford and Cambridge. All friends of science will anticipate a large and valuable accession to our knowledge of primitive man from the expedition, and will owe a debt of gratitude to the generous benefactors, Messrs. R. J. Mackie and Co., who have made the expedition possible. It is to be hoped that the admirable example thus set by them will soon be imitated by others to the mutual benefit of science, industry, and commerce; for the interests of these various sides of the national life are not conflicting, but complementary and harmonious.

Africa: Agriculture.

Driberg.

Husbandry in the Congo (MAN, 1918, 88). **33**

In his review of the *Bulletin Agricole du Congo Belge*, Mr. Torday appears to doubt whether civets damage crops. I have not seen the point raised elsewhere, but my own experience tallies with that of M. Lacomblez in testifying to the destruction done to crops by these animals.

Reference is made to the Alulu tribe, and it may save future misunderstandings if it is noted that by this designation (or by the name Baluln) the Belgians habitually refer to the Alur, a Nilotic tribe living on the north-west shore of Lake Albert and the Nile, partly in British and partly in Belgian territory. Their language is a dialect of Acholi, from whom they subdivided late in the sixteenth or early in the seventeenth century. As agriculturalists they are infinitely inferior to the Lendu, and, though cheerful, have little of the stamina and verve of neighbouring Nilotic tribes. There would appear to be no foundation for the statement that they are hostile to Europeans.

J. H. DRIBERG.

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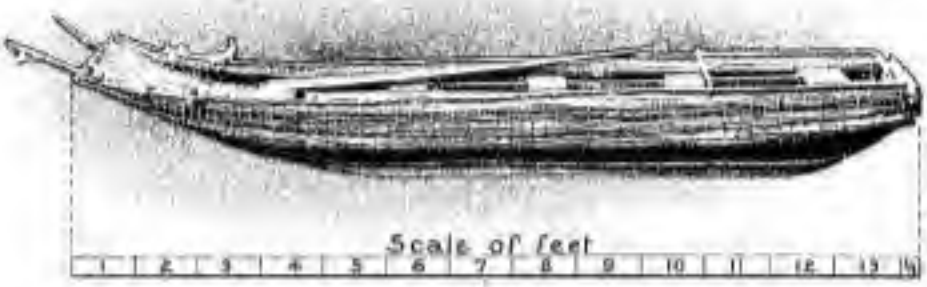

FIG. 1.

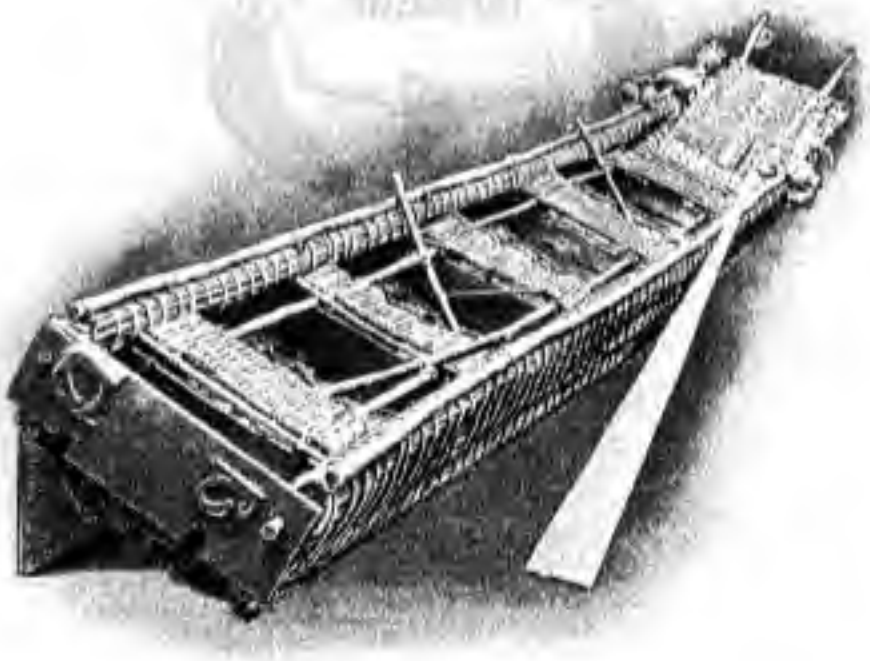

FIG. 2.

'A-GOING

With Plate E.

Chatham Islands: Canoes.

Skinner.

34

Moriori Sea-going Craft.

By H. D. Skinner.

The Moriori, who inhabited the Chatham Islands and are now practically extinct, have excited an interest comparable in kind, though not in degree, with that aroused by the extinct Tasmanians. Until quite recently students of the race have had little hesitation in describing them as a branch of the Maori people driven to the Chathams many generations ago by tribal war. Within the last two or three years, however, this view has been challenged on linguistic and on other grounds, among which may be noted the differences between Maori and Moriori vessels.

Alexander Shand, whose work among the Morioris entitles him to a foremost place among field-workers in Polynesia, distinguished, in all, four classes of vessel, all of which were composite in structure, and into none of which did the dug-out tree-trunk enter as a structural element. This absence receives a very simple explanation in the absence from the flora of the Chathams of any tree from which a dug-out could be made. Shand's four classes of vessel are* :—(1) *Waka-korari* or *waka-pukara*: Within a framework made of *matipou* or of *ake-ake* wood were enclosed masses of *korari* (flower-stalks of *Phormium tenax*), which supplied the required buoyancy. To this class the vessels preserved in the Canterbury and Dominion Museums appear to belong. (2) *Waka-rimu*: This type was similar in structure to the previous one, except that buoyancy was supplied by *rimu-rupa* (bull kelp). Shand states that the usual measurements of such craft were: Length, from 30 to 35 feet; depth, 4 to 5 feet; width, 4 to 5 feet. The two vessels that have been preserved are much smaller than this, in which they agree with the accounts of Broughton and Johnstone (1798), and of Welch and Travers (1850–60). (3) *Waka-pahii*: The structure of this type of craft seems to have been similar to that of (1) and (2), its only difference being its much greater size. Its length is stated by Shand as 50 feet, its breadth 8 feet, and its depth 5 feet. *Pahi* in Maori denotes a large, sea-going canoe. (4) "The fourth kind of canoe was like the New Zealand "*Mokihi* (or raft made of *Raupo* leaves tied in bundles), but made of *Korari* (flax) "and *Hahaule* (fern) stalks. It was quite low, and had wooden images of men "placed on it, from twelve to twenty-four in number, each with a paddle tied to its "hands. With a fair wind the canoe (*sic*) was started off to sea as a messenger to "the god Rongotakuiti, who, in response, sent ashore shoals of seals and black fish. "It was called a *Waka-ru*."

It will be seen that the four classes of vessel described by Shand belong to two types. The *waka-ru* is cognate with the Maori *mokihi*, and calls for no further discussion here. The other type is exemplified by the Canterbury Museum example (Plate E, Figs. 1 and 2), of which the following excellent description has been sent me by Mr. W. H. Skinner, Commissioner of Crown Lands for the Province of Canterbury :—

"This canoe is of comparatively modern construction, but built upon the lines of the original canoes of the Moriori.

"The first step in construction was the making of the framework, the basis of which was apparently the double keel or pair of runners. These runners, which are 10 inches apart and 2½ inches deep by ¾ inch wide, keep the framework along bottom clear of sand and pebbles when beaching the canoe. This was necessary, as this framework was made up of flimsy material which could not stand the action of beaching, as the smoothest landing would soon break its frail frame. The bottom

* "The Moriori People of the Chatham Islands." *Bulletin 2 of the Polynesian Society*, 1911, p. 10.

frame is laid horizontally between and above the two keels and is made up of 10-inch lengths of supplejack and matipo, laid 2 inches apart at right angles to the length of the canoe. On this rests the floor of the canoe, which is made up of closely packed flower stems (*Korari*) of the flax plant (*Phormium tenax*). This packing is 6 inches in thickness and constitutes the floor of the canoe. All this packing is tightly lashed together and to the bottom framework, in narrow sections, by strong flax bindings. The framework for the sides is set vertically, at right angles to the bottom frame of the canoe, and is made up of the same small but tough and pliable material, supplejack and *Matipo* and small stems of *Ake-ake*. These are 12 inches in length, are laid 2 inches apart, and run from the stern to within 18 inches of the extreme end of the square bow. Upon the outside of this frame are lashed the side boards or padding, constituted of flax sticks (*Korari*) and fern stalks (*Aruhe* or *Pteris aquilina*), the whole surmounted by a tough pole of the *Matipo* shrub, which runs from end to end of the canoe along its top edge. Immediately below the pole and between it and the seats on the inside of the structure, a roll of fern stalks, tightly bound together lengthways by lashings 2 inches apart, is laid in lengths and to end along the canoe. These would give buoyancy if the vessel were deeply laden, and would also give pliancy to the sides if subject to strain. A further lateral strengthening of structure is gained by the fixing of a rough pole along each side of the canoe a few inches out from the vertical frame and running from back seat to front seat underneath these, as shown in illustration. The width between these two rods is 10 inches. Between them the legs of the occupants were confined when seated.

"The seats, five in number, were made up of short pieces of fern stalks, 7 inches in length, laid closely and lashed side by side, supported on four cross-pieces of tough twig and supplejack, and at the back edge, in each case, by a cross piece of *Ake-ake* (*Olearia Traversi*), which would take the main weight of rower or paddler. These *Ake-ake* slats were 16 inches long by 5 inches in depth, and, with the rather heavy slab of the same wood at stern, make up the only solid timber about the structure. The stern piece, which gives stability to that part of the canoe, and would act as a substantial buffer in running before a sea, is a solid slab of that most durable tree-shrub, the *Ake-ake*, which grows so luxuriantly at the Chathams. The slab is 19½ inches over all in length by 6 inches in depth, and was rudely ornamented by two rough carvings of birds in conventional style. The photograph discloses five short rods cut from saplings which were lashed to the lower lateral strengthening bar or sapling, and projected 2 or 3 inches out over the upper rod or rim of canoe, the foot in each case being firmly embedded in the flooring material. These I take to be the thole pins or rough rowlock sticks against which the paddles worked. Shand, at page 10 of *The Moriori People of the Chatham Islands*, says, speaking of their canoes, 'They were large enough to carry sixty to 'seventy people, and were propelled by paddles (*hiao*), which, contrary to the method 'of all other Polynesians, were used by the crews sitting with their backs to the 'bows, as with Europeans, and making use of a support or thole-pin against which 'the paddle worked.' Also 'They carried fire with them for warmth, which was 'placed on stones and earth on the floor of the raft-canoe. Their raft-canoes never 'had sails: the large and sea-going ones were called *Waka pahii*, or *Pepe*.'

"The only ornamentation, apart from the conventional birds carved on stern board, were bunches of white sea-birds' feathers attached to the upper edge of the canoe from abreast the front seat onwards, and carried out along the two projecting prow sticks, whose ends were each carved to represent the head of a sea-bird.

"The length of canoe over all is 13 feet 3 inches. Length of main keel runners (straight bottom of canoe), 7 feet 6 inches; ditto of continuation of runners curving

upwards to end of square, prow, 4 feet. The extreme depth from top of barge-rod to bottom of keel runners, 17½ inches.

"The structure, designated by courtesy a canoe, was in reality a glorified *Moki* or raft, able to be propelled and steered by oar or paddles. It was not in the slightest way watertight, and when fully laden must have been water-logged to the seats. All the packing material was of the lightest, and much of it, such as the flax sticks, almost as buoyant as cork."

"Measurements of Canoe.

"Length over all from board to square end of bow		13 feet 3 inches
"Width over all at stern		19½ "
"Width inside from roll to roll of fern stalks		14½ "
"Seats		14 by 7 "
"Width of canoe at prow, outside		17 "
"Depth of canoe over all, top of barge-rod to bottom of runners		17½ "
"Depth of canoe over all, top of barge-rod to floor		7½ "
"Depth of canoe over all, from seat to floor		5½ "
"Distances between seats from No. 1 at stern to No. 2		17 "
Do. No. 2 at stern to No. 3		19 "
Do. No. 3 at stern to No. 4		18½ "
Do. No. 4 at stern to No. 5		18 "
Do. No. 5 to extreme end of bow		2 feet 8 "
"Length of keel runners which are laid in parallel lines, 10 in. apart		7 " 6 "
"Length of keel continuation of the proper runners but curving upwards		3 " 11 "
"Main runners or keels		2½ inches deep by ¾ inch wide
"Slabs of *Aho-aho* to support seats and stiffen canoe		16 by 5½ inches deep

"Oars or paddles—No. 1, 4 feet 2 inches long; width of blade at end, 6 inches.
Do. No. 2, 5 feet 7 inches long; width of blade at end, 5 inches."

It will be seen that the Moriori "wash-through canoe" differed fundamentally from the ordinary dug-out canoe of the Maoris, and this has been made one of the grounds for rejecting a close racial connection between the two peoples. A vessel of which the Moriori *Waka* may very well have been a specialisation has, however, been described by Colenso*: "Small rafts, hauled up above high-water mark, each "being 8 or 10 feet long and 3 or 4 feet wide, composed of only a few small "poles, roughly and distantly but very firmly lashed together, with open spaces "between them. On these the East Coast Maoris went out to fish in deep water, "one on each, and, when opportunity offered, to a ship with a pig or two fastened "to the raft. They said these rafts were quite safe—more so, indeed, than a small "or a middle-sized canoe, as there was no danger of upsetting." Polack† says: "Among the early inhabitants of New Zealand, canoes were made entirely of the "bulrush. We have seen, between Hokianga and Haiparu, one of these vessels "nearly 60 feet in length, capable of holding as many persons. They were remark-"ably thick, formed entirely of rushes, except the thwarts, and resembled the model "of a canoe in every particular."

The Moriori *Waka-rima* may very well have combined elements derived from raft and canoe, a development necessitated by the absence at Chatham Islands of any timber from which a dug-out canoe could be made. That the Maoris used kelp for floats is proved by the presence of such kelp floats in the cave discovered some years ago at Okain's Bay, Banks Peninsula.

The use of rowing, as opposed to paddling, for the propulsion of canoes has been recorded amongst the Maoris on the west coast of the South Island, while an

* *Fifty Years Ago in New Zealand*, Napier. Quoted by Hamilton, *Maori Art*, p. 10.
† Quoted by Hamilton, *ibid.*

oar of the Moriori type was found many years ago in a cave at the head waters of the Taieri in Otago, and is now in the Otago University Museum.* H. D. SKINNER.

Archæology. Howorth.

The Latest Prehistoric Marc's Nest. 35

By Sir Henry H. Howorth, K.C.I.E., F.R.S.

As one of the oldest members of the Royal Anthropological Institute, who belonged to its predecessor, the Ethnological Society, I crave a short space in which to protest against the insertion of a paper in the February number of MAN, which is not worthy of that publication.

FIG. 1.

The paper was written by Mr. J. R. Moir (MAN, 1919, 10), is headed "A Piece of Carved Chalk from Suffolk," and is illustrated by four figures.

Mr. Moir's contention is that the piece of chalk in question is a representation of a mammoth by some primitive man. He describes the object in detail, its four legs, its belly, and adds: "The sculpturing of "the head, ear, eye, trunk, "and elephantine-like foot "is very striking, and testifies to the skill and "accuracy of the ancient "craftsman. The dorsal "view (Plate B, Fig. 4) "shows the well-sculptured back and posterior "portion of the head, and "it appears that an effort "has been made to represent a tail," etc., etc.

This astounding statement refers to an object which is perfectly familiar to geologists and palæontologists. Large numbers of similar specimens have been found. I have four of them before me (which, with others, are in the Natural History Museum), and were lent to me by my friend Dr. C. W. Andrews, who is a skilled palæontologist. He exhibited them at the Geological Society, very much to the amusement of that body. (*See* Figs. 1 and 2.)

* Figured by Hamilton, *Maori Art*, p. 40n, No. 3.

These objects occur continually as boulders from the chalk in the post-tertiary beds of Eastern England, and are known to the ingenuous men who work the beds as "pigs." They are in reality, as is well known, casts in chalk of the internal chambers of Ammonites. A few elementary sentences on them may be here pardoned. Ammonites (so called from their supposed resemblance to the horns of Jupiter Ammon) are an extinct series of *Mollusca*, allied to the Nautilus. They came to an end at the close of the secondary period, while the Nautilus, of course, still remains with us. Like the Nautilus, they had spiral shells consisting of a series of chambers (*septa*), gradually increasing in size from the centre to the mouth, in which the animal successively lived, forming itself a new chamber to accommodate its larger size when its old one pinched it. The animal lived only in the outermost chamber, which had an open mouth. It, however, kept up its connection with the original rooms in which it lived by means of a tube enclosed in a calcareous covering, and passing through a series of perforations in the several walls of the chamber. The different chambers, except the last, in which the animal lived, remained empty until its death and decay, when they became filled up with different materials, and frequently with chalk. When the chalk beds were disrupted the fossil shells of these Ammonites were destroyed, but there remained the casts of the septa, or cavities representing exactly the minute contours of their inner surface. These became detached (sometimes they occur in groups), and, as I have said, occur as boulders in the drift. The projections mistaken by Mr. Moir for representations of mammoth's limbs simply answer to the hollows in its cell in which the mollusc kept some of its soft parts. This is the whole story, so well known to all students of Ammonites. It is natural that labouring men should consider the natural casts representations of pigs, just as the poor people at Whitby in old times thought the Ammonites were petrified snakes whose heads

FIG. 2.

had been cut off by St. Hilda, but it is disconcerting to find a still more extravagant explanation of them in MAN, which is such a deservedly esteemed scientific journal.

HENRY H. HOWORTH.

New Zealand. Beasley.

A Maori Food Bowl, "Kumete." *By H. G. Beasley.* **36**

Bowls of various forms are common from nearly all the Pacific groups, but it is a matter of some surprise that these are the exception when reviewing Maori household utensils. Hamilton* illustrates a single specimen, which seems to me to be of late work, and I recall another that was sold in London some years ago, these three being the only ones that have come to my notice. Meade† speaks of seeing a carved bowl at Makeia in 1864, which served as a punch bowl, and

was much valued by the natives, who said that it had been used for heating water with hot stones. The specimen illustrated is obviously of great age and is cut from the solid; it is boat-shaped, being wide at the tail and narrowing towards the head. The figure is of the much-diminished bird-headed type, and unfortunately lacks the point of the beak; the hands have the three fingers so common to the older carvings. The whole of the outer surface is carved with a bold spiral pattern, whilst the broad end is also treated with a full-sized female figure, but instead of the bird-head a carved projection is provided, doubtless to assist in carrying the bowl; this, when full, must have been of considerable weight, since it weighs nearly seventy pounds when empty. At first sight the specimen might be taken for a form of coffin such as was illustrated in MAN‡ some time ago. An inspection of the inner edge, however, shows that it was never intended to have a lid, nor are there any holes for its attachment. Furthermore, the surface is quite free from decay, which would hardly be the case had it been deposited in a cave.

The length from head to tail is 41 inches, the greatest width 14 inches.

H. G. BEASLEY.

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* Hamilton: *Maori Art*, Plate 63. † Meade: *New Zealand*, 1870. ‡ MAN, 1918, 49, 58.

Anthropology. Breton.

Proceedings of the Second Pan-American Scientific Congress. 37

By A. C. Breton.

This Congress was held at Washington, December 27, 1915-January 8, 1916 (the previous one having been at Santiago, Chile, in 1908), and was attended by delegations from the twenty-one republics of the western hemisphere and from Canada. There were nine sections with forty-five sub-sections:—*

I. Anthropology.
II. Astronomy, Meteorology, Seismology.
III. Conservation of Natural Resources, Agriculture, Irrigation, Forestry.
IV. Education.
V. Engineering.
VI. International Law, Public Law, Jurisprudence.
VII. Mining, Metallurgy, Economic Geology, Chemistry.
VIII. Public Health, Medical Science.
IX. Transportation, Commerce, Finance, Taxation.

Such a huge programme was difficult to manage, but Section I, meeting in coalition with five other societies, proved very successful, and the proceedings have been published without undue delay. The volume contains forty-seven papers, of which twenty-one are in Spanish. Whilst some of them consist chiefly of general observations, others contain new and interesting material on South America. Any research there deserves encouragement. It is a vast field that has been scarcely scratched as yet. No one knows what may be found there, nor how many theories may be upset later on. 'Capable observers are wanted, content to record facts and leave fancies alone. But it takes considerable training to become an observer and duly to curb the exuberant Latin-American imagination. Some of the writers assert the dictum that Man was not autochthonous in America. It is necessary, therefore, to say that we know far too little of Man's origin at present to speak with certainty. Immense changes have taken place in comparatively recent ages over the whole of the western continents, and very little stratigraphic work has yet been done in elucidation.

Only a few of the papers can be noticed here. Amongst these, Luis Thayer Ojeda, Chief of the Office of National Properties in Chile, has a great stock of information on the "Origin of surnames in Chile," from a series of documents of 1907, also from archives, electoral lists, and cemeteries. Of 167,400 names, 159,000 were of Spanish origin, and of these more than 69 per cent. were Castillian, with 14 per cent. of Basque origin. The harder, more self-reliant character of Chilians than of other Spanish-Americans, may be due to this descent. There are about 44,000 individuals with German surnames (actually nearly 1,400 different German names), 35,000 Portuguese, 22,400 Italians, 20,000 French, and 19,000 British. The Jews have been an important factor, though not visibly in surnames, as they have adopted usually names belonging to the countries where they were formerly settled. In colonial times in Chile they enjoyed tranquillity, there being no prejudice against them. "Perhaps the directing classes in our country owe the greater part of their "energies to the Hebrew blood in their veins."

E. Roquette Pinto, Professor of Anthropology at the Museu Nacional of Rio de Janeiro, writes in English on his expedition to the Indians of the Serra do Norte in 1912, and gives photographs and notes on diseases. These people were unknown until Colonel Rondon came upon them in 1907. Some individuals have waved hair, and there may have been a slight infusion of negro blood from escaped slaves of the gold mines of the Guaporé. Although in primitive condition, wearing no clothes, knowing nothing of boats even for crossing rivers, without earthenware or hammocks, they construct huts and cultivate maize, manihot, urucu, and tobacco, cut down trees

with stone axes and the aid of fire, and have long straight bows and arrows. For fishing they use arrows with three points of bone. A great ethnological collection was brought back for the Museum.

Dr. C. Morales Macedo had four papers on the deformation and trepanation of Peruvian skulls, and variations of the lambda, with photographs, altogether forty-seven pages.

General Cuervo Marquez, President of the Academy of History at Bogotá, presented a thoughtful paper, too long to be readily summarised, on the "Origenes etnograficos de Colombia," mainly an account of the Carib incursions up the rivers. With regard to the real native populations, the civilized Chibchas, Quimbayas, and others, he says: "With the Spanish conquest and the immense shipwreck of the "American race, there was lost the most interesting and important part of its "traditions, history, industries, and arts."

So little is known of the archæology of Venezuela that the Notes by Luis R. Oramas (of the Ministry of Internal Affairs), are of especial interest. He excavated cemetery mounds in the Valles de Aragua in 1914. The district was abandoned by the Indians in 1547, and the shores of the Lake of Valencia are covered with a multitude of tumuli, varying from 6 metres in diameter to 50 metres, by 3 metres high, of black earth brought from some distance. He found polished hatchets of diorite and nephrite, clay figurines of archaic type, and other objects of clay. The bodies were near the centre of the mounds, sometimes in a squatting position and covered with shards 10 to 15 cm. long, arranged in layers. On the plains of the Estados Portuguesa and Zamora he investigated another class of mound-platforms made of earth as hard as stone, so that dynamite had to be used. These were flat on top and some had five grades or steps. Nothing of consequence was found here. Causeways lead to these mounds, but are short, whilst in the mountains of the interior, towards Tacata, there are ancient roads, sometimes cut in the rock, five or more metres wide, and winding over hill and dale.

Dr. J. Tello made careful and valuable excavations of cemeteries in the Valle de Nazca, southern Peru, ranging from the Inca period on top, past the Tiahuanaco (where the tombs were more like underground dwellings, cylindrical or quadrangular), down to the Nazca and the proto-Nazca. The latter were so named by Dr. Uhle, the discoverer, but though beneath in position, the vases are of the most perfect make and the painted ornamental figures on them highly conventionalized. The proto-Nazca textiles are quite wonderful.

Careful work in another line has been done in Brazil by Dr. A. C. Simoens da Silva, in this case on the rocks used as grindstones at Cabo Frio by the early inhabitants. The grooves observed vary from 10 cm. to 170 cm., and are locally supposed to have been caused by Christ whipping the devil. This paper is in English. The very interesting account of the so-called palæolithic station at the port of Taltal, north Chile, by Aureliano Oyarzun, Director of the Ethnological Museum at Santiago, shall be treated elsewhere.

From Central America there is a good notice of the languages of Guatemala by A. Recinos, Under Secretary of External Relations. The present Mexican Government continues its patronage of archæology and desires collaboration.

Mr. S. P. Morley has done excellent work in collecting the dates that can be identified in the inscriptions on monuments found in the ruined cities of the Guatemalan region, and gives a series of diagrammatic maps showing their succession. But upon this he builds an airy fabric of Maya history, much as if one should go round English churchyards noting dates on tombstones and then take for granted that the earliest of each denoted the foundation of that place. Or, from monuments in France and Italy with similar dates, conclude that the same people

and the same language had prevailed everywhere. Since Dr. A. P. Maudslay discovered the Initial Series in the course of copying the inscriptions (from his casts and photographs), and thereby gave the key to the system of dating, described to the Royal Society, June 17, 1897, there has not been great advance in deciphering the earlier inscriptions. Mr. C. P. Bowditch has been a fine pioneer in bringing together with patient diligence all the evidence available, and Mr. Morley has the credit of finding out that the later monuments at Quirigua and elsewhere were erected at intervals of five years. Thorough study of the languages and modes of thought of the different nations who have occupied Central America may lead to some clue to the ancients' methods of delineation, beyond mere dates and numbers.

A. C. BRETON.

African Hairdressing. Driberg.

Note on Hairdressing Among the Lango. *By J. H. Driberg.* **38**

If tradition is correct, the Lango of the sixteenth century used to wear their hair dressed elaborately after the present custom of the Shilluk, with whom they were then combined under the same monarchy.

There are many indications, however, which prove that on the Hamitic invasion the Lango fraternised with the invaders, and among other Hamitic customs adopted, before migrating south, the form of Hamitic headdress seen now among the Karamojo and the Suk. It would appear to have been identical, and the change in actual fact was so slight from the Shilluk model as to require little more than the addition of the detachable hair chignon, which fell to the small of the back, and to which the name *abua* was given, though one might have expected them to have adopted the Hamitic name.

As both the Shilluk headdress and the Hamitic chignon are already familiar from previous accounts, I do not propose to do more than to refer to them here, and will proceed at once to more recent developments in methods of hairdressing.

The next step was to drop the *abua* or chignon, about 120 to 150 years ago, but this I attribute partly to the fact that Lango migrations had removed them considerably from the influence of their old Hamitic associates to peoples by whom the chignon was not worn, but even more to the change in the nature of the country, from open plateaux and rolling hills to the close savannah tracts which they now inhabit. In these areas of scrub and long grass, intersected by fœtid marshes, the chignon must have proved an annoyance and an impediment, and its wearers would have been only too glad to discard it. When on top of this their raids into Bantu countries introduced them to peoples whose heads were closely shaved, it is not surprising that they should have started a series of innovations which have now completely changed their physical appearance.

About this period two styles developed :—

(1) The hair of the head was allowed to grow long, and into it were woven, aided by a plastering of clay and chalk, cock's feathers built up into the appearance of a busby. This busby was called *kwo*, and *ecolo* was the term used of dressing the hair in this fashion.

(2) The crown of the head is called *tok*, a term which is also used to indicate this and some subsequent methods of hairdressing. The hair is allowed to grow, and when it is of a suitable length there are threaded into it small discs of ostrich eggshell and the black seeds of a convolvulus called *acholi*, forming a compact covering, on to which red chalk is plastered on occasions for decorative effect. As the hair grows, the weight of the coiffure pulls it backwards, and new bands of seeds are added above the brow, till the backward tendency produces a sagging mass of hair and seeds at the back of the neck.

On their introduction, white beads were substituted for the *acholi* seeds, patterns of lizards and fanciful figures being picked out in colours. On this also red chalk was plastered for ceremonial occasions. After the beads have been fastened on the hair, the hair is singed to remove the loose ends.

As hairdressing of this nature occupied several hours (and entailed a fee of one pot of beer and one chicken to the barber), the *tok* or the *kono* were not undone for months at a time. The term employed in this case for dressing the hair is *dingo*.

Subsequently it was found that the *tok* and the *kono* (especially the former) look almost as well even if detached from the head, and they were frequently removed by carefully shaving the hair close to the head; the hair thus forming a felt lining to the bead cap or the feather busby.*

By a further process a skull cap of felt was made by next removing the beads and leaving the hair lining, which perspiration and chalk have converted into a cloth-like texture. The skull cap is called *aboko*, but is only used by the very aged, and even so rarely.

The most modern development is a round wicker-work *tok* (sometimes called *kitok* = *gin tok*, thing for the crown of the head), often over a foot in diameter, both perpendicular and horizontal, into which the wearer's own hair is worked in such a way as to form a closely woven felt cover. The completed helmet is then ornamented with rings and bands of beaten brass, and is sometimes coated with red chalk. This fashion of headgear does not date back for more than ten years, and was a natural corollary to the practice which then originated of detaching the *tok* and the *kono* and shaving the head.

It is not usual to shave the head completely, except in mourning, and there are numerous designs into which by partial shaving the head is differentiated, many of them being identical with the patterns adopted by the Jolico (Kavirondo). The usual fee of one pot of beer and one chicken is payable to the barber.

These designs are known by technical terms,† a few only of which are here appended as illustrating the diversity of custom, which, with two exceptions, is guided by personal predilections rather than tribal regulation. Nor is this surprising when one bears in mind that the shaving of the head is a recent innovation; but that at some more or less remote date a significance, either physical or psychical, will be attributed to each individual coiffure, is none the less probable.

Achudi, the head shaved clean except a top-knot.

Atira,‡ a space of three fingers shaved from the crown to forehead. (This must be done after killing an enemy.)

Atoro, a mode reserved for twins, who must adopt it.

Abim, longish hair all over the head.

Arut, the hair shaved in patches.

Apam, hair shaved short all over the head.

All modes of hairdressing are to be seen at the present day, with the exception of the Shilluk and the Hamitic chignon, though the permanent *tok* and *kono* are infrequent except in the remote north-east. But while these modes have considerably decreased in popularity during the last ten years, there is at present a tendency among the young men to revert to them, and to abandon the modern habit of shaving the head.

The practice of women has not changed and from time immemorial they have left their hair uncut. It is anointed with croton or sesamum oil mixed with ashes

* It may be noted that a warrior after killing an enemy cuts off his *tok* and hangs it over his own fireplace.

† To shave the head generally is *lyelo* or *loto*; *masuo* is to trim the hair, but not to cut it close; to shave the head with special reference to the style of coiffure is *keyo*.

‡ *Chido* is the verb used of this mode. Thus, *keyo achudi*, but *chido atira*.

or chalk, and twisted into ringlets or strands hanging on all sides from the crown of the head. Women dress each other's hair, a tedious process of hours, but charge no fee for their services.

J. H. DRIBERG.

REVIEWS.

America: Anthropology. Wissler. **39**

The American Indian: An Introduction to the Anthropology of the New World. By Clark Wissler. Pp. xiii + 435. New York, 1917.

The magnificent example set to the rest of the world by American anthropologists, in the zeal with which they have collected the fast-vanishing knowledge of the indigenous culture of their continent has had one disadvantage. The immediate task of collection has been so absorbing, and the material has grown so rapidly in volume, that little has, until lately, been done to summarise the results or show their bearing on the theoretical problems of Anthropology. During the last few years much has been done to remove any reproach which students elsewhere might be tempted to make on this score, but until now there has been lacking any trustworthy and comprehensive account of American culture, for the *Handbook of American Indians* suffers from the usual disadvantages of multiple authorship.

Dr. Clark Wissler, who has now supplied this long-felt want, is at the head of the Anthropological Department of the great New York Museum, and is thus in the closest touch with existing knowledge and its most recent advances. His book gives a systematic account of American culture, beginning with its material, and passing on to its social and linguistic aspects. A series of most valuable maps show the distribution of such features of culture as food-supply, use of narcotics, means of transport, types of basketry, weaving and clothing, pottery, decorative designs and sculptures, and forms of social organisation. Then follows an account of the culture areas which have been so closely studied during recent years, and of the linguistic areas, which show so incomplete a correspondence with them. Brief chapters deal with archæology and somatic characters.

The only criticism which can be passed on this main descriptive portion of the book is that Dr. Wissler might have dealt more fully with the social and religious aspects of culture which are now interesting his colleagues so greatly, but the failure to treat them adequately is, doubtless, a necessary result of the rapid progress now being made in these subjects, and their consequent fluid nature. Concerning the main purpose of the book as a record of existing knowledge, it is enough to say that it is indispensable to any worker who wishes to know the American Indian, and is unable to study at first hand the vast mass of literature of which it is so admirable a synopsis.

Incidentally throughout the book, and explicitly in the final chapter, Dr. Wissler deals with the origin of the pre-Columbian culture of America, both his leaning throughout and his final summing-up being definitely in favour of its essentially independent character. Since his argument has been regarded as convincing by one of the most distinguished of American anthropogists,* one who has himself shown a less uncompromising hostility to the idea of external influence, a few words must be said about it.

A sentence on page 359 reveals a profound misunderstanding of the reasoning which has led many European students to favour the hypothesis of external influence. When discussing the similarity between the age-societies of the Plains Indians and those of Melanesia and Africa, Dr. Wissler asks: "What chances had these tribes "[the Plains Indians] to meet the Melanesian or the Masai of Africa during this "period [the last 700 years]"? If this passage represents the current view in America of the argument of the advocates of transmission, there can be no hope of

* *Science*, XLVII, p. 462, May 10, 1918.

advance as long as it continues. No advocate of transmission on this side of the Atlantic, whether British or German, has ever imagined that either Melanesian or Masai have come into contact with the Plains Indians during the last 700 years or at any earlier period.

If the examination of two cultures shows the presence of so many points of similarity, especially in detail, as to lead students to believe that the cultures are related to one another, it is assumed, not as Dr. Wissler supposes, that the two peoples have been in contact, but that some third influence has come into contact with both, producing on the one hand similarity, and on the other hand such differences as we should expect to follow the introduction of a new institution in widely separated and very different environments. If the study of the age-societies of the Plains Indians, Melanesians, and the Masai should lead anthropologists of this school to believe in their common nature, they would assume that some influence had found its way to these three widely separate regions, and would then endeavour to discover the nature and place of origin of this influence.

Dr. Wissler's argument is also vitiated by his adoption of the current view, a view based entirely on tradition, that the Polynesians are recent arrivals in the Pacific. Believing in this recency, he argues that they cannot have influenced the Maya or other high cultures of pre-Columbian America. The argument concerning the independence of American cultures is here made to rest on the wholly untenable belief in the simplicity of Polynesian culture.

W. H. R. RIVERS.

Ritual and Belief. Hartland.

Ritual and Belief: Studies in the History of Religion. By Edwin Sidney Hartland, F.S.A. 22 × 14 mm., pp. 362. London: Williams and Norgate. 1914. **40**

In this valuable collection of essays, an appreciation of which in these pages has been too long delayed, Dr. Hartland displays the quality apparent in his many previous works—a wide acquaintance with the literature of anthropology and folk-lore, a clear presentation of the results of his reading and reflection, ingenuity in the suggestion of theories, and a lucid style. The most important essay is that devoted to the relations of Religion and Magic. He insists on the fundamental unity of these conceptions, while he does not deny their gradual separation and opposition at a later stage. "They have their common root in the same attitude "towards the environment, social and physical. Rite and beliefs have been "elaborated and organised together. For ages during this process magic and "religion must have been integral parts of one another, as they now are in many "parts of the world." The essay entitled "The Boldness of the Cults" brings together many examples of the methods by which men of the lower culture coerce their gods to obey their will and grant their desires. "The Haunted Widow" illustrates the thesis that the possibility of sexual relations between the living and the dead depends upon the belief that what survives the catastrophe of death is supposed to be a sentient and powerful being. "The Philosophy of Mourning Clothes" shows that "many customs, sometimes born of widely diverging motives, "converge in a similarity of expression. Hence it is impossible in the present "state of our knowledge dogmatically to assert a single origin" for these practices. "They are the expression of the psychological reaction caused by the shock of death "and the consequent breach of the circle of kinship and other social bonds. The "taboo results from the bewilderment and terror caused by the entry of death into "the circle. The conduct and garb of the mourners are the outcome of grief and "sympathy, bubales of fear." The "Rite at the Temple of Mylitta," one of the many cases of religious prostitution discussed by Sir James Frazer (*Adonis, Attis, Osiris*, third ed., i, 36, *et seq.*) is held to be a puberty rite: "A maiden was not

" admitted to the status and privileges of adult life until she had been esre-
" monially deflowered." "The Voice of the Stone of Destiny" brings together numerous examples of the custom of selecting a king by magical rites, as in the Indian examples, where the rightful heir is designated by an elephant or by a snake. Field workers in anthropology will be well advised to study the essay, "Learning to Think Black," in which the true methods of investigating the beliefs and usages of men of the lower culture are lucidly presented. Enough has been said to illustrate the importance of this book to students of anthropology and folklore.

W. CROOKE.

Anthropology.

American Journal of Physical Anthropology. Vol. I. Nos. 3 and 4. July-December, 1918. Washington. **41**

These two numbers contain good articles in addition to useful bibliographies of current literature dealing with anthropological subjects. In No. 3, Adolf Schultz, of the Carnegie Institution, Washington, treats of the "Relation of the external nose " to the bony nose and nasal cartilages in whites and negroes." He says that study of the nasal cartilages from an anthropological standpoint has been undertaken only by Hovorka (1893) and H. Virchow (1912 and 1913), on small lines of material. The author has based his study on thirty-six human heads, mainly American negroes, the material coming from the anatomical department of the Johns Hopkins Medical School. In each case measurements were taken of the nasal height (nasion to sub-nasal point), and the greatest breadth across the alæ; then an exact drawing was made of the profile of the nose, including the wing, by means of the dioptograph of Martin, after which the right half of the nose was dissected. Fifteen drawings of noses are given.

V. Giuffrida Ruggeri has a paper on the origins of the Italian people, and W. H. Babcock one quoting many slight descriptions of native Americans met by the early explorers along the coasts.

In No. 4, W. C. Farabee describes the Arawak of northern Brazil and southern British Guiana, with photographs and tables of measurements. They are scanty remnants of tribes who may have wandered far before reaching their present habitat. Certainly the portraits of an Atarai and Mapidian are exactly like some Mexican Indians, and also the Seminoles of Florida. Dr. Farabee says these Arawak are entirely surrounded by Caribs, and some have Carib wives. They have adopted the Carib song and dance, but keep to their own customs. A man must marry his first cousin, either his father's sister's daughter or his mother's brother's daughter. He may have two wives, who are sisters or cousins, and live in amity together. A full report will be published by the Museum of the University of Pennsylvania.

Dr. Franz Boas has notes and tablet with maps, on the anthropology of Sweden, but the material is scanty for definite results.

The editor, Dr. A. Hrdlicka, continues and concludes his survey of Physical Anthropology in the United States, and of those men and institutions who have done most to further its progress. Co-operation should result in valuable work where there is such an extensive field.

A. C. B.

Folklore.

Frazer.

Folk-Lore in the Old Testament: Studies in Comparative Religion, Legend and Law. By Sir James George Frazer, D.C.L. 3 vols. London: Macmillan & Co., Ltd. 1918. **42**

All students of Anthropology will welcome Sir James Frazer's new gift from his unrivalled store of learning, set forth with methodical care and adorned with his

accustomed eloquence and with many a stroke of rich humour. He begins at the very beginning with the Hebrew version of the Creation and Fall of Man, followed by the Deluge and the Tower of Babel, the Patriarchal Age, the legends of the Conquest of Canaan and the Early Kings, and winding up with a discussion of a number of questions upon the Law. This is not to say that he has given us an exhaustive treatise in the sense that every point of the folklore of the Hebrews has been dealt with. That, perhaps, is impossible. We miss many legends, such as that of the Sons of God and Daughters of Men, Lot's Wife, the Origin of Circumcision, the extraordinary story of the Dismembered Woman, the Famine for Saul and his bloody house, and so on, which would require another work informed with the erudition of one as widely conversant with the traditions of the world as Sir James Frazer himself. But in regard to the subjects which he has treated, he has succeeded in being as nearly exhaustive as one man can be. The result is that upon them we have a matchless storehouse of information, to which it is difficult to add much of value so far as scientific research has hitherto gone.

Sir James Frazer, as becomes a student of folklore, is not content, however, with the collection and comparison of variants; he seeks the origins and meaning. The preliminary postulate of the book is that the ancient Hebrews as we know them from their splendid literature "had probably passed through a stage of "barbarism, and even of savagery; and this probability, based on the analogy of "other races, is confirmed by an examination of their literature, which contains "many references to beliefs and practices that can hardly be explained except on "the supposition that they are rudimentary survivals from a far lower level of "culture." Some of these relics he sets himself to illustrate and explain. In doing so he avails himself of the results of the textual and historical criticisms of modern scholarship, as well as his own acquaintance with the Hebrew text. Without this postulate and these results of scholarship, indeed, an inquiry into origins would be in vain. As it is, some of the most instructive passages of the book are to be found in his discussions on origins. He is a cautious theorizer on this subject. His conclusion, for instance, that Deluge tales are partly exaggerated reports of actual events, and partly mythical, is thoroughly sane. And yet I am not sure that it comprises the whole truth. The difficulty is in the enormous exaggeration of historical facts which the hypothesis postulates. In this connection it would have been helpful to have the author's considered judgement on the theory put forth many years ago by Dr. Brinton, the eminent American Anthropologist, in the seventh chapter of his *Myths of the New World*, namely, that the Deluge myth is "an "unconscious attempt to reconcile a creation in time with the eternity of matter." In other words, it is an effort to find a beginning. In favour of this may be urged that, with few exceptions, the story does not appear in the traditions of the lowest races, and that, as Dr. Brinton points out, myths of creation, literally speaking, are scarcely found among primitive nations, while a series of constructions and demolitions often are.

The discussion of Abraham's Covenant leads to some illuminating accounts of ceremonial oaths. But the burial of a half-body at Gezer is perplexing. If the girl in question was offered in sacrifice, why should half her body be buried in a common burial-place? In connection with this we might have expected some reference to the hewing of Agag in pieces. Was that a ritual sacrifice?

The prohibition of cousin-marriages by various peoples may well be due to a slowly-growing sense of kinship, such as we seem justified in inferring from the forbidden degrees superadded to the kinship rules of descent, or to the transition from female kinship to male kinship, which might, temporarily at least, involve the recognition of all cousins on the same footing. Sir James Frazer's argument on the

origin of cousin-marriage as a corollary of the exchange of sisters is powerful and convincing. The demonstration, however, of the priority of the two-class exogamy to totemism can hardly yet be said to be established. The author seems to have modified to some extent his view of the primitive savagery of the Arunta; at all events, he admits an advance of the Arunta organisation upon that of their neighbours, the Urabunna. This implies much which he has not explicitly formulated. The whole section on the organisation of relatively primitive peoples involved in the consideration of cousin-marriages is a valuable contribution to anthropological research, and one of the most important parts of the book.

Some of the chapters might well have been extended. Stories of men being swallowed by a fish or dragon and brought forth again alive, parallel to that of Jonah, are found in very remote places almost all over the world. The Judgement of Solomon is in the *Jataka*; and a very similar tale is to be read in Giles' *Strange Stories from a Chinese Studio*. It is also the subject of a caricature in Pompeii. Sir James has successfully explained the bells on the priest's robe. Every old Celtic saint possessed a bell—doubtless to keep the devils at arm's length—and ancient bells attributed to one or other of the saints are still to be seen in Irish museums. The power of bells to prevent "the ravages of thunder and lightning" is set forth as believed by various peoples. The northern trolls, however, who were terrified of thunder wielded by Thor long before Christianity came, could not endure the beating of drums, which they thought to be a species of thunder: and apparently bells later took the place of thunder and drums. At all events, the trolls could not away with the sound: a dislike shared by British fairies, Breton korrigans, and the White Lady of Zabiehlitz, in Bohemia. In the same way, in Japanese legend, the cannibal Oni were driven away by the holy incense and sound of the bells of the monastery of Hojoi San, founded for this very purpose by the Emperor Kwwumme Tenno, in the eighth century A.D. The dissertation on cutting and wounding for the dead is perhaps the most comprehensive account of the custom yet given to the world; but its conclusion that "the blood offered to the "dead may be intended to feed and strengthen them" is, as the author recognises, by no means certain. Attention may also be drawn to the various superstitions narrated under the heading "Boring a Servant's Ear," as interesting and useful, if not strictly relevant. After all, it is clear that the object was irrevocably to bind the slave—whether by his blood or not we must withhold judgement pending further researches.

In short, there is not a section, hardly, indeed, a page, that does not throw light upon the dark places of human superstition, or contribute to the solution of some scientific riddle. Without asserting that every position taken by the author is unassailable, the work is beyond doubt a commentary of extraordinary value on Hebrew legend, belief and law. But it is far more than that. It is a series of monographs on anthropological subjects, motived and bound together into a unity by their relation with Hebrew traditions. As such it will be prized by students, whether of the special problems of the Old Testament, or of the more general problems and implications of the science. E. SIDNEY HARTLAND.

Russia: Archæology. Tallgren.

Collection Zaoussailov, II: L'âge du fer et l'époque dite de Bolgary. A. M. Tallgren. 4to. 59 pp., 57 Figs., xii Plates. Helsingfors. 1918. **43**

In spite of the terrible distractions of Finland and Russia, the author has succeeded in completing the account of the Zaoussailov collection, our notice of the

first part of which appeared in MAN, 1917, 86. The dedication, "A la Mémoire " de Joseph Déchelette, l'éminent archéologue français, qui, en qualité de volontaire, " est mort en combattant pour la France en octobre, 1914," sufficiently shows the author's insight on the present troubles.

The late periods dealt with are not fully represented in the collection, but the lucid account of them here is a welcome outline of the foreign literature and results. There is first an account of two groups from the province of Kazan of about the beginning of our era. These are intermediate between the style of Pianobor, of B.C. 100 to A.D. 300, and that of Oka, of 200–600 A.D. The most distinctive things are so-called "spaulet" brooches, which are traced to an earlier rosette brooch with three converging branches holding a catch for the pin. Animal-headed bracelets found with these are called Scythic, and are such as accompany Cupid remains in Egypt. Discs of chalcedony were hung from necklaces, and this custom was probably earlier, and carried into Egypt by the Scythian migration, as they occur about 600 B.C. (*Labyrinth*, xxxi).

The Tchoudo civilisation was further east, in Perm and Viatka, reaching the Urals. This is divided into three periods: (1) with Scythic animal forms and late spirals, B.C. 200 to 0; (2) with flat castings, ribbed, and pierced with rows of holes, having chains of pendants with duck's-foot ends, what may be termed "dangles," A.D. 0 to 800. This, of course, joins with the Byzantine taste for dangles, as on Theodora at Ravenna. The 3rd period has the same dangles, and shows contact with the Bolgary and Arab civilisations, from 800 to 1400 A.D.

The Bolgary civilisation is that of the eastern or black Bulgarians (see Bury's Gibbon, VI, 545), who were Hunnish Turks. They were about Kazan in A.D. 600–800; were conquered by the Tartars in the thirteenth century, and destroyed by Timurleng in the fifteenth century. Their city, Bolgary, now desert, is surrounded by a rampart 4½ miles round, within which are many remains. The main period is from A.D. 1100 to 1500. The style is largely Arab-Persian, like what is found in Egypt, showing the wide diffusion of this style. A main feature is the variety of spring padlocks in the form of animals, or cubic, cylindrical, triangular, or spherical. The author describes the pattern of a triangle of globules as distinctive, but this was used in Roman work, and 3,000 years before in Egypt. A plate is devoted to the iron axes; those with a closed socket continued as late as A.D. 800 at Tambov. The open eye is said by the author not to be before Roman times, but it is found at La Tène of iron, and of bronze probably of 1000 B.C. The pottery of this age is clumsy and ugly. The use of the conical black pots with a minute mouth, is finally settled by the account of one full of mercury. The late Greville Chester said that he had found globules of mercury in such a pot, so that such a use is not only casual. Forty such pots came from a single site in Russia, and they are often found in Egypt and elsewhere.

An account of the weights describes the Russian and Irak pound (\$10,408 grammes) as being the light decimal pound of 50 Babylonian shekels or darics. It was divided into 96 zolotniks, which were equal to the Attic drachma. Later there was another weight, called the *ansir*, of 750 grammes, which may be eastern in origin, as it is 20 Chinese taels. The actual weights catalogued are: Three of the Russ half-pounds, seven on a standard of 78½ grammes, and many others which are more obscure. This catalogue will be essential for all students of the Christian period in Russia, as the long bibliography used is almost entirely Russian, with a very few French and German works, and there is no such general summary available as we have in this catalogue.

W. M. FLINDERS PETRIE.

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FLINT IMPLEMENTS ATTACHED TO APACHE "MEDICINE CORDS."

ORIGINAL ARTICLES.

Apache Indians: Folklore. With Plate F. Hildburgh.

On the Flint Implements attached to some Apache "Medicine Cords." *By W. L. Hildburgh.* **44**

The accompanying plate shows four Apache "medicine cords," and an ornament or charm, collected in 1909, by Dr. P. E. Goddard, for the American Museum of Natural History in New York City. The four cords shown on the plate, together with several others belonging to the Museum, are characterized by the inclusion, among their attached objects, of flint implements to which supernatural powers have been attributed by the users of the cords. The manufacture of such implements, and their employment for the purposes for which they were originally made, are practically obsolete among the Apache of the present day, although a few stone arrowheads are still sometimes made by some of the Apache (the San Carlos and the White Mountain, for example) for use in tipping the arrows which some of the older men, who like to wear their ancient dress on special occasions, place in the quivers they carry at such times. The implements herewith shown are not of modern make, but have been picked up by the Apache for the express purpose of magical employment. The use of flint implements as objects with magical (generally preservative) powers, among peoples accustomed to working with objects of metal in the place of the stone tools of their more or less remote predecessors, has been reported from many parts of the world, while even in Europe, where it certainly occurred at least as early as about 1000 B.C.,* it still survives in various forms. The conceptions underlying the use of the stone objects here illustrated are, therefore, worthy of examination, not merely in view of the light that they may throw upon Apache culture, but, in addition, because of their relation to the broader problems associated with the origin and distribution of certain widely spread beliefs. A full examination of these conceptions is beyond the scope of the present note, the main purposes of which are the drawing of more general attention to the employment in magical operations of obsolete flint implements by the Apache, and the suggestion of further and more detailed inquiry, when an opportunity presents itself, among the Indians of the south-west concerning these uses. The material now at hand seems too scanty for any final determination of the reasons upon which the Apache have based them.

The objects shown on Plate F are as follows:—

Fig. 1.—A cord, formed of two strands of buckskin twisted together and then coloured red, to which the following objects are attached: A double-pointed implement of white chalcedony (A); a crescent-shaped bar of abalone (haliotis) shell; a white disc bead, a piece of "turquoise," and a reddish cylindrical bead; and a small buckskin bag, coloured red, said to contain the seeds of a certain plant. Worn diagonally across one shoulder and under the opposite arm as a protection against missiles. Each month the assemblage of objects is painted red, and zigzag lines are painted upon its owner's cheeks; sometimes his body also is painted. The seeds within the pouch were said to be small and black, quite costly, and from a plant foreign to the district, growing in a twisted fashion. If a person has been shot, he swallows four times a little of the medicine contained in the bag, taking it from the end of a spear of gramma grass, and he then recovers quickly. If the group of objects is worn, the wearer is safe from being shot. (Jicarilla Apache, New Mexico.)

Fig. 2.—A cord, formed of two buckskin strands, each coloured red, to which the following objects are attached: A greyish flint arrowhead (B), upon which a bit of abalone shell is fastened; a smaller whitish flint arrowhead (C); a small buckskin

* See C. Blinkenberg, *The Thunderweapon in Religion and Folklore*, Cambridge, 1911, p. 22.

bag, coloured red, containing "medicine"; and five tiny beads and one larger disc bead. Worn as a protection against missiles. (Jicarilla Apache.)

Fig. 3.—A buckskin strip, to which are attached the following: A large red flint arrowhead (F); a smaller translucent whitish arrowhead (E); a drab flint knife (D), called "Thunder's knife," from which a piece at either end is missing; several quartz crystals; a small gourd; a miniature woman's moccasin of buckskin; and some black beads. The gourd has a small transverse hole through its neck, for attaching it to the cord; it has not been used as a receptacle for "medicine," for its upper end has not been cut open; it may possibly have served merely as a rattle for the diversion of its small bearer. The group of objects was worn, as a preservative, at the neck, by a child. (San Carlos Apache, Arizona.)

Fig. 4.—A string of glass beads, to which the following are attached: A large broken flint (H); a small obsidian arrowhead (G); a quartz crystal; a rhomboid piece of pearly shell, with notched sides; and a circular bag of beaded buckskin. The string is a piece of ordinary white cord. (San Carlos Apache.)

Fig. 5.—A yellowish-brown flint spearhead, round the tang of which is a buckskin thong held in place by sinew. Worn at the neck as an ornament or charm. (White Mountain Apache, Arizona.)

In "The Medicine-men of the Apache" (*9th Ann. Rep. Bur. Ethnology*, 1892), Captain J. G. Bourke illustrates (Figs. 436–439 *inc.*) and describes a number of Apache medicine cords, to none of which, however, are any flint implements attached. He speaks (p. 550) of the mystery surrounding the "izze-kloth," or medicine cord, whether of the medicine-man or of the layman, and, after mentioning his inability to set forth the meaning of the objects attached to such cords, he adds, "Some excuse "for this is to be found in the fact that the Apache look upon these cords as so "sacred that strangers are not allowed to see them, much less handle them or "talk about them." Among the objects attached to the cords he mentions (p. 552) "beads and shells . . . pieces of the sacred green chalchihuitl . . . , petrified "wood, rock crystal, eagle down, claws of the hawk or eaglet, claws of the bear, "rattle of the rattlesnake, buckskin bags of hoddentin,* circles of buckskin in which "are inclosed pieces of twigs and branches of trees which have been struck by "lightning, small fragments of the abalone shell from the Pacific coast, and much "other sacred paraphernalia of a similar kind." He says, further, that the Apache believe that the cords will protect a man while on the warpath, that a bullet will not injure a man wearing one of them, and that "the wearer can tell who has stolen "ponies or other property from him or from his friends, can help the crops, and cure "the sick." His remark (*loc. cit.*) that "the use of these cords was reserved for "the most sacred and important occasions . . . they were not to be seen on "occasions of no moment, but the dances for war, medicine, and summoning the spirits "at once brought them out" appears to refer only to certain cords, for in its limitation it agrees neither with some of his own statements as to the uses of the cords nor with Dr. Goddard's observations concerning a number of the cords collected for the Museum.

The variety of objects which are employed as parts of the medicine cords, and the variety of purposes to which such cords are applied, suggest that the strands or strings themselves are probably generally (and perhaps always) merely the means for supporting in each instance a series of objects, to which objects individually supernatural powers are attributed, and each of which is intended to serve some specific purpose of its own—that is, that a medicine cord is generally (if not always) not a device which has power as an entity, and has been constructed according to a fixed

* For notes on "Hoddentin [or haditin], the pollen of the tule, the sacrificial powder of the Apache," see Bourke, *op. cit.*, pp. 499–507 *inc.*

formula based either on definite items or on definite considerations of a supernatural character, but that it is a mere fortuitous assemblage of objects with magical attributes, corresponding to the strings of miscellaneous objects such as are worn in many parts of the world for protective or for curative purposes.

What is the fundamental reason underlying the recent employment, by the Apache, of the stone implements shown on Plate F, is not given directly by either the information obtained by Dr. Goddard or that published by Captain Bourke. I think, nevertheless, that we may deduce from the records of those investigators and from certain available information concerning some peoples closely related to the Apache, that the Apache's magical employments of these and of similar implements have been closely connected with a mental association of siliceous stone implements with lightning. Some of those employments, certainly so far as the present time is concerned, would appear to be due, on the one hand, to an assumption of a close relationship between arrows (and also some other weapons) and lightning, and on the other to an assumption that some power associated with the lightning may by means of certain processes be caused to protect or otherwise act beneficently towards human beings. The data at my present disposal, however, seem inadequate for the definite determination of how, or when, the use of stone implements as magically protective objects originated among the Apache.* In view of the slashing of the sick with a flint implement, during a curative ceremony, by a medicine-man of the Kerasan,† a people closely related both by blood and in culture to the Apache, and in view of the past and present practices of various other peoples in many parts of the world, it is arguable that originally such implements were used in magical operations because they were the ordinary weapons of offence or defence against animals and human beings, and might therefore naturally have been presumed to be equally potent against supernatural creatures. Two scouts, in referring to the five flint implements ("medicine arrows") attached to a certain Cheyenne necklace of human fingers and other objects,‡ informed Captain Bourke that "an arrow might become 'medicine' either from having been shot into " the person of the owner himself or into the body of an enemy, or even from " having been picked up under peculiar circumstances,"§ and as the idea is ancient and widely spread that an object by means of which a living being has been killed has thereby acquired strong magical powers, and as a factor which we may call "strangeness" is the acknowledged basis of many amulets reported from various parts of the world, it is further arguable that the Apache magical use of flint implements has originated in some idea related to the ideas set forth in connection with the Cheyenne necklace, even though the Cheyenne differ in stock and in culture from the Apache. If we assume that either one or the other of the above suggested origins be the true one, we must, if our previous deduction be correct, then conclude that at some period, subsequent to that of the original magical employment of the flints, a belief in the flint implements as intimately associated with lightning became grafted upon the original belief, so that, instead of the magical effect being sought through the action of the flint implements as direct agents, it came to be sought through the flint implements primarily as representatives of the lightning. A belief in the connection of flint implements with lightning, a common one in Europe, may possibly have been introduced by the Spanish Jesuits and Franciscan Fathers, who,

* Representations of arrowheads also sometimes serve in Apache magic. Bourke, referring to the dress of one of several Apache medicine-men engaged in a curative ceremony, says (*op. cit.*, p. 384) that his "mask was . . . shaped in front like the snout of a mountain-lion. His back was painted " with large arrowheads in brown and white, which recalled the protecting arrows tightly bound " to the backs of Zuñi fetiches."

† Observed, and communicated, by Mrs. E. C. Parsons.

‡ *See* Bourke, *op. cit.*, Plate IV and pp. 480 *seqq.* § *Ibid*, p. 483.

in the sixteenth and seventeenth centuries had missions, later abandoned, among the Apache, although those missions seem to have left but small traces of their influence.* But it was much more probably introduced—if it actually be an introduction, and not a pre-Spanish conception of the Indians—by the Mexican woman, carriers of many Spanish superstitions, who were taken, from time to time, by the Apache in their raids. In this connection an opinion of Blinkenberg, who has made an elaborate study of the frequent associations of flint implements with lightning, is worth quoting. After stating that only a few scattered associations of that kind have been reported from America, he adds that these "most frequently appear in such a form as to "suggest that the thunderstone belief, in the cases in question, was introduced by "European immigrants (especially the Spanish and Portuguese . . .), who "brought the idea with them from their native country fully formed."†

While the Indians of the Southwest have in some cases been exceedingly assimilative, having absorbed certain European customs or beliefs so completely that they at present regard the introduced matter as having originated among their own ancestors, the evidence which we possess tends to show, I think, that the association of certain weapons—which anciently had their most important parts made of siliceous stone—with lightning is so deeply rooted in their custom and belief as to give good grounds for a conjecture that it preceded the Spaniards in the Southwest. The evidence that I have which seems to indicate that the Apache wear, and otherwise magically employ, their flint implements because of a connection which they assume, and have probably long assumed, to exist between such implements and the lightning, is the following:—

Among the Apache lightning seems to be regarded as a source of magical power. Bourke mentions a Chiricahua Apache medicine-woman who had been struck by lightning "whose claims to pre-eminence among her people would seem to have had "no better foundation than her escape from lightning stroke and from the bites of "a mountain lion."‡ This woman, we may observe in passing, wore at her neck a "stone amulet, shaped like a spear . . . The material was the silex . . . "taken from a lodge at the foot of a tree which had been struck by lightning."‡ Several examples of the powers attributed to the wood of trees which had been struck by lightning are given by him. He says (p. 527) that "The Apache, both "men and women, wear amulets, called tsi-daltsi, made of lightning-riven wood, "generally pine or cedar or fir from the mountain tops, which are highly valued "and are not to be sold . . . they are decorated with incised lines representing "the lightning. Very often these are to be found attached to the necks of children "or to their cradles. Generally these amulets are of small size." His reference to the inclusion, among the articles on a medicine sand, of "circles of buckskin" containing bits of lightning-struck wood has been quoted above; he says (p. 553) that "If the circle [we may infer from the context, one containing lightning-riven wood] "attached to [a certain] one of these cords is placed upon the head it will at once "relieve any ache"; and he mentions (p. 591) an amulet consisting of an inscribed piece of buckskin enclosing a cross formed of a lightning-riven pine-twig. Finally, he states (p. 478) that he was "led to believe" that the bull-roarers of the Apache were made "from wood, generally pine or fir, which had been struck by lightning

* *Encyc. Religion and Ethics*, s.v. "Apache."

† *Op. cit.*, p. 6.

‡ *Op. cit.*, pp. 454 and 468. This woman informed Bourke (*see* p. 508) that "In time of much "lightning, the Apache throw hoddentin and say: 'Gan-ja-la, ittindi,' be good, Lightning." Another person showed him "how to pray with hoddentin in time of lightning or storm or danger "of any kind" (*ibid*, *loc. cit.*). It should be noted, however, that the hoddentin is similarly used in prayers to the sun, the moon, the dawn, some planets, etc., and is employed by the Apache in all their dealings with the supernatural (*see ibid*, pp. 499 *seqq.*).

" on the mountain tops. Such wood is held in the highest estimation among them." The Apache bull-roarers, used in rain-making ceremonies, have zigzag lines on the back, representing "the hair of their wind-god. The hair is of several colours, and " represents the lightning."* Further evidence as to the association, in the Apache mind, of the magic-working bull-roarer with lightning, and of the association of lightning with obsolete stone implements, seems to be afforded by the bull-roarers of the Navajo, a people closely related both in blood and culture to the Apache, for "The Navajo chanters say that the sacred groaning stick may be made only of " the wood of a pine tree which has been struck by lightning,"† and the Navajo use large ancient stone blades which they find, particularly those made from a greenish siliceous stone, as bull-roarers in some of their curative ceremonies‡; furthermore, certain of their wooden bull-roarers are "serrated on both edges, to simulate " the form of the snake or lightning."§

The flint implement worn by the medicine-woman referred to above was evidently, as shown by the story of where it was found, regarded by the Apache as closely related to lightning. To it, as to the lightning-struck wood, magical powers were ascribed—a tiny fragment of it was sometimes "broken off and ground " into the finest powder, and then administered in water to women during the time " of gestation."‖ Again, the flint implement (D) of the cord shown in Fig. 3 was called by the Apache "Thunder's knife."¶ In connection with the Zuñi, who are closely related to the Apache and among whom flint implements are commonly used as, or in connection with, fetiches or amulets, there have been recorded various beliefs showing a distinct association of flint implements with lightning. Thus, of the flint implement, Cushing says** that "Although fashioned by man, it is regarded " as originally the gift or 'flesh' of lightning, as made by the power of lightning, " and rendered more effective by these connections with the dread element; pursuant " of which idea, the zigzag or lightning marks are added to the shafts of arrows." And, in recording a Zuñi legend, he speaks (*op. cit.*, p. 14) of "the arrows of lightning," by which the beasts of prey were struck and instantly "shrivelled " and burst into stone."†† Furthermore, "lightning is often given the form of a

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* It is perhaps arguable that the association of lightning with the bull-roarer occurs among the Apache because of the sound made by the instrument rather than because of a preference in respect of its substance for a magic-working material, for among some peoples that sound is thought to resemble thunder or, as among the Apache also, the noise of rain-laden wind (*see* Fraser, *The Golden Bough*, 2nd edit., Part 7, pp. 228 *seqq.*).

† W. Matthews: "The Mountain Chant: A Navajo Ceremony," in *5th Ann. Rep. Bur. Eth.*, p. 430. The sound of the instrument is likened (p. 430) to that of a rain-storm.

‡ Observed, and communicated, by Mr. E. H. Morris.

§ Bourke, *op. cit.*, pp. 477, 478. The form of certain others somewhat resembles that of a spearhead; *see*, for an example, Matthews, *loc. cit.*

‖ Bourke, *op. cit.*, p. 469. He also found "the same kind of arrows in use among the women of Laguna and other pueblos."

¶ Bourke mentions (*op. cit.*, p. 468) the sparks emitted by siliceous stone when struck by another hard substance as tending to prove to a "savage" that "the fire must have been originally " deposited therein by the bolt of lightning," but he does not say that he found such a belief among the Apache. D. G. Brinton, in *The Myths of the New World* (3rd edit., rev., 1896, pp. 182, 183) refers to a similar belief among the Sioux, but does not make clear his authority for the statement.

** F. H. Cushing: "Zuñi Fetiches," in *2nd Ann. Rep. Bur. Eth.*, p. 10. I think that the zigzag markings he mentions may, however, possibly be based on another idea; i.e., that underlying "the " keraunos usually stamped on the Graeco-Roman sling stones of lead: the sling stone is to strike " the enemy as lightning strikes, and with the force of lightning" (Blinkenberg *op. cit.*, p. 38, *footnote*).

†† For a series of references to the association of lightning with arrows, *see* Blinkenberg, *op. cit.*, p. 121 (§ 184). *Cf.* also *ibid*, p. 38, *footnote*.

" serpent, with or without an arrow-pointed tongue, because its course through the " sky is serpentine, its stroke instantaneous and destructive."* The " Knife-feathered Monster " of the Zuñi, " the hero of hundreds of folklore tales " is " furnished with " flint knife-feathered pinions and tail. . . . His weapons are the Great Flint-" knife of War, the Bow of the Skies (the Rain-bow), and the Arrow of Lightning."† The Zuñi have medicine cords to which flint implements are attached, and such implements are fastened to many of their animal-shaped fetishes.‡ The Keresan, whose use of a flint implement in a curative ceremony has been mentioned above, also use flint implements, without accessories, as magically protective devices; thus, when going out at night, a Keresan will hold one in the hand, or will place it beneath the tongue, as a protection against witches.§

Summing up the above evidence, we see that the flint implements attached to Apache medicine cords are not improbably carried because they are associated with lightning, for we have seen that wood unquestionably associated with lightning is used on the cords because of its assumed magical power, and that arrows, and their flint points, and other flint implements, are associated with lightning. We may, I think, regard as further evidence in this direction a feature of the monthly ceremony attending the use of the cord of Fig. 1; that is, the painting of zigzag lines—conventional representations of the lightning—on the owner's cheeks. And the use of certain of the cords, some of them with lightning-riven wood and others of them with arrowheads, primarily as protections against wounds from missiles, would seem possibly still further evidence, since the lightning is associated, in Apache and in Zuñi belief, with warlike weapons.‖

The quartz crystals, which are to be seen on the specimens of Figs. 3 and 4, occur also on a number of cords not illustrated. Bourke records (*op. cit.*, p. 401) that the medicine-men rely greatly on the aid of pieces of crystal in seeking lost property, and that a medicine-man told him that by looking into a crystal " he could " see everything he wanted to see "; and Russell speaks of some Pima medicine-men prizing certain transparent crystals which contained each a beneficent spirit.¶ In view of the important part which lightning appears to play in connection with some of the medicine cords, and in view of the fact that quartz crystals are regarded in various parts of Europe as the material parts of lightning,** some possible association in Indian belief of lightning with the crystals seemed worth looking for. I had not found any direct association of this kind, until Dr. Clark Wissler informed me that among the Pawnee (who are, however, not of the same stock as the Indians of the Southwest) war-bundles contained each a crystal, supposed to be a fallen star, which was kept in a buckskin bag shaped like a thunder-bird. While in that particular case the association in question conceivably may have been due to European

* Cushing, *op. cit.*, p. 9.

† *Ibid*, p. 40.

‡ A number of these latter are illustrated by Cushing, *op. cit.* Concerning certain of them he says (p. 41) that "The perfect fetich of this order [the Priesthood of the Bow] differs but " little from those of the Hunters. . . . The arrow-point, when placed on the back of the " fetich, is emblematic of the Knife of War. . . . and is supposed, through the power of " Sä-wan-ki'a [this seems to signify something like 'The power that impels to the making of war'] " or the 'magic medicine of war' (?) to protect the wearer from the enemy from behind or from " other unexpected quarters. When placed 'under the feet' or belly, it is through the same power, " considered capable of effacing the tracks of the wearer, that his trail may not be followed by " the enemy."

§ Observed, and communicated, by Mrs. Parsons.

‖ *Compare*, however, *footnote* ‡ above.

¶ F. Russell: "The Pima Indians," in 26*th Ann. Rep. Bur. Eth.*, pp. 259, 260.

** *See* Blinkenberg, *op. cit.*, p. 121 (§ 134).

influence,* we may, if we assume as its basis the pointed form and the flashing faces of the quartz crystal, and the effects of refraction within the crystal, well account for the possibility of its presence in America before the entrance of the Spaniards. We should further observe that while a mental association of rock crystal with lightning, or at least with the thunder-bird, might conceivably have occurred through an assumption of a relationship between that stone and rain, due to the similarity of the mineral to water and to the not infrequent inclusions of water within crystals, a purely rain-basis for the association seems hardly sufficient to have secured the introduction of the crystals into the war-bundles.

W. L. HILDBURGH.

Obituary.

Keith.

Sir Edward Charles Stirling, C.M.G., F.R.S. *By Arthur Keith.*

45

On March 20th, 1919, Sir Edward Charles Stirling died at Adelaide, South Australia, the city in which he was born in 1848. He was a distinguished Fellow of the Royal Anthropological Institute, having been elected an Honorary Fellow in 1894. He was best known among Anthropologists as the author of Part IV of the *Report on the Work of the Horn Scientific Expedition to Central Australia*, published in 1896. When that Expedition set out in 1894 he accompanied it as Ethnologist. He was then already a man of forty-six, and had won a reputation as a Zoologist by the discovery and description of that curious mole-like marsupial *Notoryctes typhlops*. He also made known fossil remains of Diprotodon, and conducted a research into the nature of the female genital organs of the kangaroo. For these discoveries and researches he was elected to the Royal Society in 1893—the year before the Horn Expedition set out. He had qualified himself for the post of Ethnologist, not only by his medical education and his studies in Natural Science as a student of Trinity College, Cambridge, but also by the knowledge he gained by acting as Director of the Museum of South Australia. With the central regions of Australia, traversed by the Horn Expedition, he became acquainted in 1891, when he accompanied the Earl of Kintore, then Governor of South Australia, on a journey across Australia from Port Darwin to Adelaide. Thus when the Expedition set out he was qualified to observe systematically and record faithfully the characters and customs of the Central Australian tribes. He had also the benefit of the experience and advice of the late Mr. F. J. Gillen, Special Magistrate and Sub-Protector of Aborigines at Alice Springs, besides the ready assistance of another distinguished Fellow of the Institute, Sir Baldwin Spencer, of Melbourne. Hence the report which Sir E. C. Stirling drew up on the return of the Horn Expedition is a mature document providing Anthropologists with first-hand information regarding the physical characters, customs, and culture of Central Australian tribes.

As has been so often the case in past times, Sir Edward Stirling entered the field of Anthropology by the gateway of Medicine. After taking honours in Natural Science at Cambridge he entered St. George's Hospital, London as a student, and ultimately became a surgeon—being elected assistant surgeon to St. George's Hospital in 1875, combining that post, as was not uncommon at the period, with the lectureship on Physiology to the school attached to the hospital, and also teaching operative surgery to the students. In 1881 he was tempted back to his native city, Adelaide, where he threw himself into building up the medical side of the University, and serving as surgeon to the Adelaide Hospital. Science and public work gradually appealed to him more and more; he became Director of the Museum, a member of

* Mr. Morris has informed me that the belief that obsidian, a natural glass, is the result of lightning striking the places where it is found is very prevalent among Mexican workmen. This is of interest here, in view of the glassy nature of quartz crystals.

the Legislative Assembly, and filled the chair of Physiology in the University. Then in the heyday of his life he broke into Zoology, and finally, as we have just seen, finished up a busy and profitable life as an Anthropologist. A. KEITH.

British East Africa. Lydekker.

The "Mtepe" Dhau of the Bajun Islands. *By C. J. W. Lydekker.* **46**

A very picturesque type of dhau, known as the *mtepe*, is found among the Bajun Islands of the East African coast. The construction of these vessels is singularly curious, as they are built entirely without the use of nails or iron. The timbers (which are of mangrove wood cut in the swamps by the builders, *mafundi*)

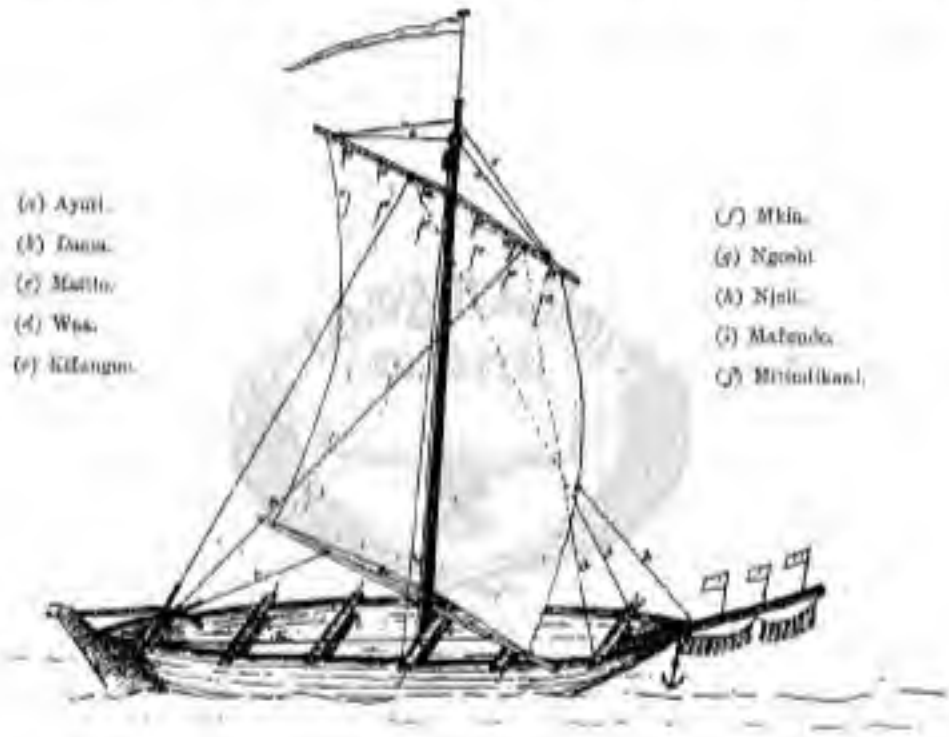


FIG. 1.—BAJUN MTEPE.

are held together by an ingenious system of sewing with cocoanut fibre, the stitches being afterwards wedged firm with small wooden pegs, *nguruthi*. The whole is strengthened by additional wooden pegs which are used as nails, and these help to hold the timbers in place. The timbers are also sewn and tied on to the ribs, *maturumi*. The sides are kept in place by two sets of transverse beams, varying from five to seven in number. The upper ones, *mitindikani*, are fixed on the top of the sides by notches cut in their ends, and are also fastened with rope, and the lower ones, *mafundo*, are let into the sides about a foot from the top and are fixed by sewing. The mast is tied to the second or third *mtindikani* to give it additional support.

Another feature of these vessels is the use of a square matting sail, *utanga*, which is plaited from the fibre of the *mkoma* palm. The sail is attached at the

top and bottom to yards, *foromali*, and is hoisted by means of two ropes known as *mkia*.* It has two sheets, the forward one called *ngoshi* and the stern sheet called *dama*, which are attached to each side of the sail. There is also a rope fixed to the sail, called *mjeli*, which is passed through a hole in the bowsprit and tied to the forward *mtindikani*. The sail also has two sets of reefs, *kifungwa*, and two further stays, *wan*, from the upper yard. There are also two other ropes from the mast head to the upper yard, called *mosito*, which serve to support the yard.

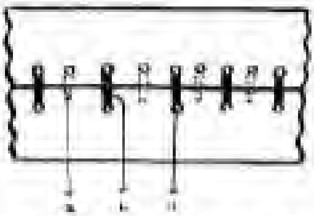


FIG. 2.—OUTSIDE VIEW OF TWO TIMBERS, SHOWING METHOD OF SEWING.

(a) binding peg; (b) stitch; (c) peg.

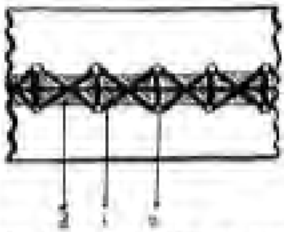


FIG. 3.—INSIDE VIEW OF TWO TIMBERS, SHOWING METHOD OF SEWING AND CAULKING.

(b) stitch; (c) peg; (d) fibre caulking.

The *mkia*, *ngoshi*, *dama*, and *wan* are all fastened to the various *mtindikani* when the sail is hoisted.

The *mitepe* are pointed at the stern (*mli ya nyuma*) as well as at the stem, *mli ya mbe*. The object of this is to present a smaller surface to the force of the waves in rough weather than would be the case where the stern is square shaped. The formation of the stem and stern is curious. It consists of several > shaped pieces of wood, called *zitwa*,† which are placed one above the other (and sewn), extending from the topmost timbers to the keel, *mkuku*. The whole is then strengthened in the case of both stem and stern by one long "post," sewn on to

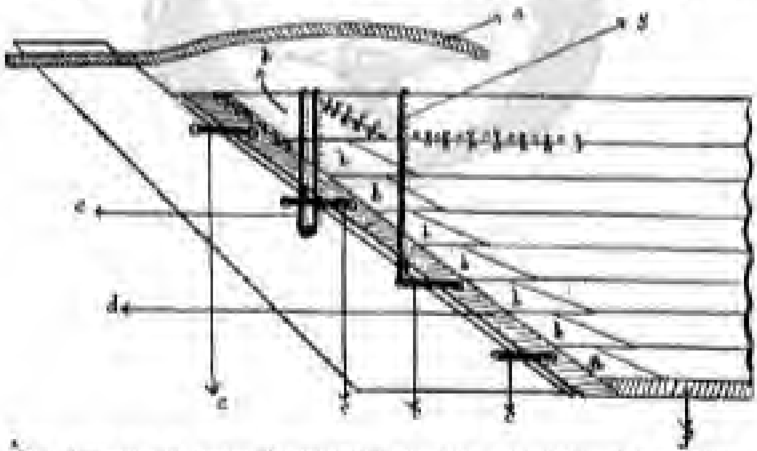


FIG. 4.—VIEW OF STERN (SECTIONAL) SHOWING FORMATION AND METHOD OF ATTACHING RUDDER.

(a) bar ([illegible]); (b) zitwa; (m) [illegible]; (f) fashini; (e) [illegible]; (f) mkuku (keel); (g) rope to prevent rudder being lost (this has no special name).

the front of the *zitwa*, called *fashini*. The rudder, *shikio*, is of a sloping shape, and is fastened to the stern post by means of pieces of rope, called *zikono*, made

* I have been unable to trace the use of this word (which literally means an animal's tail) in this connection. It is possible that these ropes suggest the appearance of the tail of those animals whose tails are of a rope-like nature as, perhaps, the monkey.

† This is the plural of *kitwa*, which means "a head." The use of this word for both stem and stern is curious. One can easily imagine its derivation for the stem as being the head of the vessel, but it is not so easy to see in what connection it is used for the stern.

from coconut fibre tied in three or four places, and these take the place of ordinary iron rudder joints. There are also two other ropes fixed to the rudder from the stern, one to prevent the rudder from slipping down out of place, *kama*, which is attached to the rudder by being doubled into a loop on each side over a wooden peg driven into the rudder, and the other, which has no special name, is tied into one of the holes of the *zikasa*, for the purpose of keeping the rudder from being lost should the *zikasa* get broken or cut while sailing.

A bowsprit, *kalisa*, having a slight upward curve, is fastened to the prow.* It is generally decorated with a number of small flags, *zibaramu*, attached to the top-side of it, or in some cases with bunches of *mkoma* palm fibre, known as *zipeo*, suspended from beneath (*vide* Fig. 1).

The meaning of the *zibaramu* is as follows:—In former times the *mitepe* were pirate craft, and the *zibaramu* were displayed to indicate war or peace according to their colour. If the *zibaramu* were white, this meant that the *mitepe* was on a peaceful errand, but if red, that the *mitepe* intended to attack any other vessel that it might meet. The use of black *zibaramu*, however, showed that the *mitepe* was quite prepared to attack other vessels, but would not do so unless her challenge was accepted. The general method of attack was by boarding the opposing vessel, and the crew then fought with swords, *upanga*, and, in later times, with flint-lock muskets, *bunduki*; cannon were never carried. The *mitepe* frequently sailed in "squadrons" commanded by a chief or "admiral," whose vessel was distinguished from those under his command by a flag or pennant, *utakutaka*, attached to a thin staff let in to the top of the mast-head. The pennant consisted of three pieces of material—black, white, and red—sewn together in lateral stripes. In modern times, however, every *mitepe* carries a white *utakutaka*.

The *zipeo*, or bunches of fibre, hanging from the bowsprit, are of more recent origin and have no meaning attached to them, being merely used as an adornment, and the same may now be said of the *zibaramu* and *utakutaka*, which are generally white.

The mast, *mlingoto*, is a plain mangrove pole (not always symmetrical) which is held in place by two stays, *ayari*, the heel fitting into a step, *metamu*, attached to the keel.

A shelter made of mangrove poles and thatched with coconut palm leaves, *mekuti*, is usually erected in the after part of the vessel in which the crew can sleep and eat their food. (This can be seen in the accompanying photograph, Fig. 6.)

Besides the sail, the *mitepe* are also equipped with oars, *makasia*, which are used to turn the vessel round if she is unable to pay off on another tack. These are made of a thin mangrove pole with an oblong piece of wood tied on to one end. There are no rowlocks, however, and the oars are worked by passing them through loops of rope, *kishwaru*, which are tied on to the upper timbers.

Mangrove poles, called *pondo*, are also used to pole an *mitepe* along in shallow water when the sail has been prematurely lowered.

Two anchors, *nanga*, are usually carried, which are fixed to the bow and stern respectively. These comprise the only pieces of iron in the whole of the vessel.

The origin of the *mitepe* is of interest. Before the Portuguese came to this coast (that is over 400 years ago) a number of people called *Wadiba* by the local inhabitants settled along the Bajun coast. These people are supposed to have come from the Laccadive Islands, off the south-west coast of India.

It appears that while on a voyage to some destination unknown, the Wadiba vessels were blown out of their course to the East African coast, and finally were

* Formerly a bowsprit of a beak-like shape was used (*vide* Fig. 4), but this is rarely seen now, and I only know of one *mitepe* which has this.

broken up on the rocks near the island of Kiwaya, about 35 miles north of Lamu. The Bajun tended these Wadiba, and eventually inter-married with them, and their descendants may still be recognized among the Bajun. After the Wadiba had settled down, they rebuilt their vessels, and in course of time the Bajun learnt to copy them, and the modern *mtepe* is practically the same as the Wadiba vessels, which, however, were built of coconut timbers. Previous to this the Bajun had no vessels except dug-out canoes.

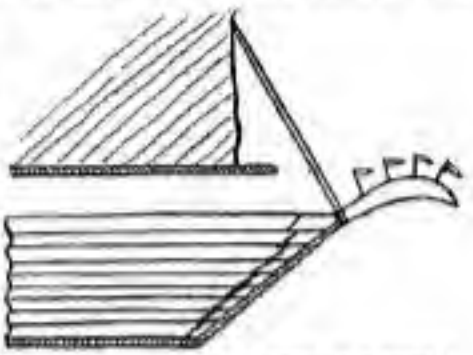


FIG. 5.—SHOWING TYPE OF PROW AS FORMERLY USED.

It is a very pretty sight to see two or three of the quaint-looking *mitepe*, starting from Lamu Harbour on an outward voyage, and the effect is heightened by the sailors giving vent to their exuberance of spirits by beating loudly on a native drum, *ngoma*.

The *mitepe* are now generally used for bringing to Lamu the mangrove poles, *boriti*, cut by the Bajun from the swamps that abound in the Lamu Archipelago. These *boriti* are first stripped of their bark (which has a high commercial value), and are then used for building purposes by the natives.

The *mitepe* sometimes make a voyage as far as Mombasa, but they are not very suitable for carrying merchandise any great distance owing to their leaky condition. It is, in fact, the practice of the sailors to bale the vessel in turn during the entire voyage, to such an extent does the water come in through the seams of the timbers.* This is obviated to a certain degree by a kind of caulking made of *nkoma* palm fibre, which is sewn on the joints of the timbers and smeared over with an extract of mangrove bark, which is obtained by pounding up the bark with a rough kind of pestle and mortar, *kinu*.

FIG. 6.—MTEPE.

An *mtepe* has to be resewn and supplied with fresh pegs every year. Their life varies from three to four years, after which they are useless, as they cannot be rebuilt.

The approximate measurements of an average *mtepe* are as follows: Length (top measurement) 60 feet, length of keel 35 feet, width of beam 18 feet, depth of hold 6 feet 6 inches. From this it will be seen that the beam is broad in comparison with the keel. The great discrepancy between the length of the keel and that of the top measurement of these vessels

* This is done in the following manner: Two of the crew bale together, one man standing above and the other in the hold, and pass to one another a kind of basket, known as *sdao* (which take the place of buckets). The *sdao* are emptied and filled in rotation to the accompaniment of a song or chant by the bailers.

is due to the long pointed prow and stern. The names of the various parts of the *utepe* used above are the local Kiswahili, or Ki-Bajuni names.

I am indebted to the courtesy of Mr. M. W. H. Beech, M.A., F.R.A.I., for the accompanying photograph, and to Mr. F. S. O'Mooney for the sketch (Fig. 1) of an *utepe*.

C. J. W. LYDEKKER.

Greenland. Balfour.

An Eskimo Week-Calendar. *By H. Balfour, M.A.* **47**

Among a number of specimens from the Eskimo of Greenland recently presented to the Pitt Rivers Museum by Mr. Louis C. G. Clarke, is one which puzzled me considerably at first, as I could not remember having seen anything quite like it. Its use was by no means obvious to me. It consists (Fig. 1) of a small rod of bone, 5 inches long, ¾ inch wide, and $\frac{7}{16}$ inch thick, very dark brown and a good deal weathered, having all the appearance of age. The upper end terminates in a bilobed or cordiform knob; below this a series of indentations divides the rod into five more or less elliptical lobes, and the lower end is narrowed and stem-like. The three lower lobes are perforated near their centres with a hole which passes right through the rod, the two upper lobes have each two similar perforations, making seven perforations through the five lobes. The cordiform terminal is drilled longitudinally to a depth of ⅝ inch, and a very small transverse hole communicates with the longitudinal one, but does not pass right through the rod. The lower extremity is also perforated to a depth of ⅝ inch, but not by drilling, as the hole is roughly elliptical. A very small hole passes completely through the stem close to this end. One surface of the rod is convex and the other plain, as seen in the section. The specimen was collected on Disko Island, West Greenland, c. 69°-70° N., though I do not know by whom.

FIG. 1.

Now, having turned to the literature for enlightenment as to the function of this peculiar object, I eventually found a solution in W. Thalbitzer's paper on the Ammassalik Eskimo (*Meddelelser om Grönland*, XXXIX, 1914, p. 667 and Fig. 392). The specimen which he figures, and which I reproduce in Fig. 2, is of wood and is much larger than the Disko example, being, apparently, about 13¾ inches long. But the two specimens are essentially the same and the function of the one must be that assigned to the other. The Thalbitzer specimen (Fig. 2) consists of a flat stick divided into seven parts, or lobes, by lateral notches, each lobe perforated at the centre. A bone peg, shaped like a violin peg, is attached to the lower end of the stick by means of a fairly long sinew thread, and is "meant to be stuck into the seven holes successively for "the seven days of the week." The object is, in fact, a week calendar, enabling the user to keep count of the days of the week and to know when it is the Sabbath. As Thalbitzer suggests, the adoption by the Eskimo of the week and its division into seven days must have been the result of contact with the resident Moravian missionaries in the south of Greenland. Thence the practice of keeping record of the passage of the week-days must have spread up the west coast as far as, or possibly beyond, Disko. It would appear that the use of the week-calendar spread later to the East Greenland coast, the example described by Thalbitzer having been obtained from the Eskimo of Ammassalik (or Angmagsalik).

FIG. 2.

But the east coast natives did not come into contact with the European settlers until comparatively recently, and such calendars as reached them must originally have been bartered along the coast northwards as far as Ammassalik. Thalbitzer says that "the almanack has a few times been imitated in East Greenland," but G. Holm (*Meddelelser om Grönland*, X, 1888, p. 141, footnote), intimates that the division of the week was not known on the east coast. He describes how one of the calendars, such as was in use on the west coast, was made in wood with seven holes into which a peg could be stuck, and was given to an east coast native, so that he might during the winter, when he was cut off from outside contact, know when the Sabbath came round. Holm appears to doubt the advisability of including the calendar exhibited in the Ethnographical Museum at Copenhagen among the objects belonging to Ammassalik, and presumably regards it as having been introduced there from the south or west.

The Disko specimen (Fig. 1) is clearly one of the west coast calendars. Although there are only *five* lobes or divisions (due, no doubt, to careless manufacture), the *seven* holes for the peg are there. The peg itself and its attaching sinew thread are missing, but the small hole at the lower end was evidently for attaching the peg. The longitudinal hole drilled in the upper heart-shaped terminal may have been intended for the insertion of the peg when "off duty." I have neither seen nor read of any other example of the week-calendar made of *bone* and should be glad to hear of any other specimens. HENRY BALFOUR.

REVIEWS.

India. **Marshall.**

A Guide to Sānchī. By Sir J. Marshall, Kt. Calcutta. 1918. **48**

In this small volume, Sir John Marshall has provided a convenient and accurate guide to the Stupas and other monuments of Sānchī, of which a fuller account will be found in the *Report of the Archæological Survey of India* for 1913–14, to the review of which (shortly to appear) readers are referred for details of the excavations and of the remains brought to light. It is sufficient to remark here that this guide makes it possible for students or visitors, who have not time or opportunity to refer to the report, to obtain a clear idea of these magnificent monuments and of the sculptures with which they are decorated, both those which have long been known and those which have recently been brought to light. Sir John Marshall must be congratulated on the great progress made in this work, one of the most important tasks which an Indian archæologist could undertake. It is pleasant to read of the active and liberal support given to this work by Her Highness the Begam of Bhopāl. M. L. D.

Ethnography. **Teggart.**

The Processes of History. By F. J. Teggart. Yale and Oxford Presses. 5s. 6d. net. **49**

This is an effort to examine methods of study of "How man everywhere has come to be as he is." Race, climate, economics alone are pronounced insufficient, and the appreciation of idea-systems and the study of their evolution is urged. The author unfortunately still urges that we must take man as man for granted, that we cannot utilise race-facts, and one can only regret that the vagaries of writers who have been interested merely in the supposed superiority or inferiority of various supposed races have done so much to hinder the progress of the study of race. But it is a step in advance to find in this book a strong plea that history is not unitary; we are not all trying to climb the same ladder. A further advance would be to Herbertson's position that the wholes which are greater than the

individual are largely geographical in foundation. Meanwhile a wise warning is given to students of humanity not to try too much to explain the past by the present; Lyell's method, valid in a large measure in geology, is inapplicable because the present environment of a people may be much altered by human effort in the past. Moreover, who will set bounds to the vagaries of expression of the human will?

The author urges study of Eurasia as a unit with its great interior area under critical conditions of life and its various projections, China, India, Europe, in which pressure has helped to substitute territorial for kinship groupings. This is undoubted, but it is only one aspect of the question; the various projections stand out towards the rain, and with a good mixture of rain and sunshine cultivation is encouraged, though very probably its difficulties would not have been faced had there been no pressure.

The ideas of "progress" in this book are interesting. Fresh contacts are claimed to be powerful agents, releasing the minds of peoples or of their leaders from the inhibitory influences of an established idea-system. This is a step towards the anthropological view that the great crucibles of humanity are the places of development of inspiration. The removal of inhibitions may surely be effected by influences other than war, which seems rather a symptom of the break-down of an old scheme than a valuable factor of progress; the growth and breaking of an abscess may in the end lead to a cure, but we need not call the abscess a factor of the cure.

H. J. F.

Buddhist Art. Foucher.

50 *The Beginnings of Buddhist Art, and other Essays in Indian and Central-Asian Archæology.* By A. Foucher, of the University of Paris, revised by the author, and translated by L. A. Thomas and F. W. Thomas, with a Preface by the latter. Paris: Paul Geuthner. London: Humphrey Milford. 1918. Price 31s. 6d. net.

The translation of this collection of essays by the eminent French scholar, M. A. Foucher, has been made by Mrs. L. A. Thomas and her husband, the learned librarian at the India Office. The book is printed in beautiful style, and it is illustrated by a fine series of photographic plates. The lectures are the work of a master of the subject, who combines wide learning with that grace of style and lucidity characteristic of the writings of the best French archæologists. Among the many questions raised in these lectures, the first, dealing with the beginnings of Buddhist art, is perhaps the most attractive. Here the question is considered: Why did the ancient Indian sculptors abstain from representing either Bodhisattva or Buddha, in the course of his last earthly existence? The first suggestion, that the ancient school had either not desired or had not been able to figure the Blessed One, is rightly dismissed. After a full discussion of the question, M. Foucher offers the following explanation:—

"The history of the ancient régime in Buddhist art prior to the Gandhārian revolution may, in fact, be summed up somewhat as follows: We have every reason to suppose that there was, first, from the fifth century onwards, local production at the four great centres of pilgrimage, and conveyance into the interior of India, of rude delineations copying the 'sacred vestiges' actually still visible above ground in the sites of the miracles. It was these naturally unpeopled tableaux which, thanks to time and distance, ended by being regarded as systematic representations of the four principal episodes in the life of the Blessed One, and which, joined to some routine variations composed in accordance with the same formula, served, before as well as after Aśoka (middle of the third century B.C.) for the decoration of religious foundations; finally, on the monuments of the second century (still

before our era) we remark already tentation towards freedom from the tyranny of the ancient customs by recourse to subjects previous or subsequent to the last existence of Buddha. However, the school of the north comes on the scene. By reason of the very fact that it has been almost entirely removed from these traditional influences, it must, in our system, present characteristic signs quite different from those of the ancient school. Now, the conclusions of an extensive study which we have long dedicated to the Greco-Buddhist bas-reliefs, seem to have conspired in favouring, point for point, the reverse of the preceding proposition. What we have observed at Gandhāra is, first, the almost total disappearance of legendary scenes later than the cycle of the *Parinirvāṇa*, as also a marked diminution in the number of *Jātakas*; in the second place, there is an indefinite multiplication of episodes borrowed from the youth or the teaching career of the master, whose corporeal image occupies now the centre of all the compositions; finally and correspondingly, there is an extreme rarity of symbolical representations. In any case—and this is our concluding argument—the old emblems do not disappear completely."

Considerations of space prevent the discussion of the many interesting questions raised in the subsequent lectures: "The Representations of the 'Jātakas' on the Bas-Reliefs of Barhut," "The Eastern Gate of the Sāñchī Stūpa," "The Greek Origin of the Image of Buddha," The Trinitary Pair in Gaul and in India," "The Great Miracle at Çrāvastī," "The Six-Tusked Elephant," "Buddhist Art in Java," "The Buddhist Madonna."

This valuable work will be indispensable to all students of Buddhist art.

W. CROOKE.

Ethnography. Akera Matsumura.

51 *Contributions to the Ethnography of Micronesia.* By Akera Matsumura. (*From the Journal of the College of Science, Tokio Imperial University*, Vol. XL.)

This is an account of some aspects of the ethnography of the Marians, Carolines, and Marshall Islands, under Japanese occupation since Germany involuntarily lost her interest in them. Early in 1915 the Japanese Government despatched a party of scientists to the islands, and the author was amongst them, "ordered to "undertake anthropological studies." It would appear that—in Asia—an island environment is not necessarily fatal to official interest in anthropology.

The paper is in the main technological, and deals chiefly with collections made during a cruise occupying in all 64 days, only a short time being spent on land. There was, therefore, relatively little opportunity of studying the natives and their ways, but the author has enlarged the scope of the paper by his numerous references to other writers on Micronesia and the Pacific generally. A striking feature is the 36 plates, with their good reproductions of photographs. The text also contains numerous illustrations, but many of these are by no means successful reproductions.

Allowing for the limitations imposed by the conditions of the voyage, the paper provides a very interesting and useful summary of the ethnography of Micronesia, and the author may be congratulated on living under a Government that realises the importance of anthropology.

H. S. H.

ANTHROPOLOGICAL NOTES.

A Piece of Carved Chalk from Suffolk.

52 The Editor of MAN has received from Mr. Reid Moir a strong protest against Sir Henry Howorth's criticism of his paper (MAN, 1919, 10). Mr. Reid Moir's main contention is, that while he agrees that the object published by him is

the cast of one of the chambers of an ammonite, he claims that this cast has been intentionally modified by the hand of man. Mr. Reid Moir is preparing a further communication on the subject, and meanwhile this note is inserted to make clear his position in the matter.

A Scheme for Organised Research. **53**

The following scheme has been adopted by the Council of the Royal Anthropological Institute:—

(1) When it is desired to undertake any specific organised research, or to form a catalogue of anthropological data, the Council shall appoint for this purpose, from among the Fellows of the Institute, a Research Committee, and at the same time nominate the chairman and secretary of such committee; the Council shall also define the terms of reference and the scope of the committee work.

(2) Such Research Committee shall have power to co-opt members, Fellows of the Institute or not.

(3) It shall be within the power of the Research Committee, with the sanction of the Council, to vary its title and the scope of its work.

(4) Each Research Committee shall decide the method to be pursued in collecting and filing the data, and shall present to the Council a report embodying the same, which shall be printed in MAN; as many copies as the committee may require shall be printed separately for distribution among those likely to take part in the work.

(5) Research committees shall invite the co-operation of any other society interested in their work, and shall endeavour to obtain assistance from universities, university and training colleges, secondary schools and elementary teachers, as well as from local societies and individuals interested in such inquiries.

(6) All catalogues shall be made on the card index, or some similar vertical filing system, and the secretary of each committee shall be the responsible custodian of the catalogue formed by his committee.

(7) Each Research Committee may requisition such cards, boxes, drawers, and other appliances as it may consider necessary for its work, and, subject to the approval of the Council, these shall be provided at the expense of the Institute.

(8) All catalogues and other materials collected by the Research Committees shall be the property of the Institute, and shall be deposited in its rooms; they shall be accessible to the Fellows at all times that the rooms are open for general use.

(9) Each Research Committee shall report annually to the Council.

Under the provisions of the above scheme it was resolved by the Council to appoint a committee to report on the classification and distribution of rude stone monuments and allied structures.

ACCESSIONS TO THE LIBRARY OF THE ROYAL ANTHROPOLOGICAL INSTITUTE. **54**

(Donor indicated in parentheses.)

Introductory Sketch of the Bantu Languages. By Alice Werner. 7½ × 5. 341 pp. Kegan Paul, Trench, Trübner and Co., Ltd. (The Publishers.)

Eine Geographische und Ethnographische Analyse der Materiellen Kultur Zweier Indianerstamme in el Gran Chaco (Süd Amerika). By Erland Nordenskiöld. 9½ × 6½. 304 pp. 44 Maps and 69 Illustrations. Erlanders Boktryckeri, A.B., Göteborg. (The Author.)

Det Tropiska Sydfjällets Indianer. By Gustaf Bolinder. 9¼ × 6½. 246 pp. Illustrated. Albert Bonniers Förlag, Stockholm. (The Author.)

EYRE AND SPOTTISWOODE, LTD., His Majesty's Printers, East Harding Street, London, E.C. 4.

Fig. B.—Mtumbi (Kaszibar type).

EAST AFRICAN OUTRIGGER CANOES.

ORIGINAL ARTICLES.

East Africa: Canoes. With Plate G. Hornell.

The Affinities of East African Outrigger Canoes.

By James Hornell.

55

In the paper by Dr. A. C. Haddon on East African Outrigger Canoes, which appeared in MAN, 1919, 29, he concludes by inviting those able to adduce additional evidence upon Indonesian outrigger design to carry further the enquiry into the origin of the African type. A recent extensive tour through Indonesia, devoted in the main to a study of the boat designs of that region, has given me considerable intimacy with many of the variations in use there. Unfortunately I was able to do little in regard to the nomenclature of the parts, and what facts I have to adduce are limited almost entirely to structural details.

On reading the paper referred to, it appeared at once clear that four distinct varieties of outrigger occur on the African coast, characterised mainly by minor differences in the joint piece or stanchion connecting the float with the boom.

In the first of these, the Mombasa type, as it may be called, as shown by Dr. Haddon's photographs, the stanchion is long, slender, and extremely oblique, slanting downwards and outwards to its insertion in a hole through the float. In continuation of its oblique position beneath the boom, the upper end is carried inwards and upwards to an almost equal length; to maintain it the better in position

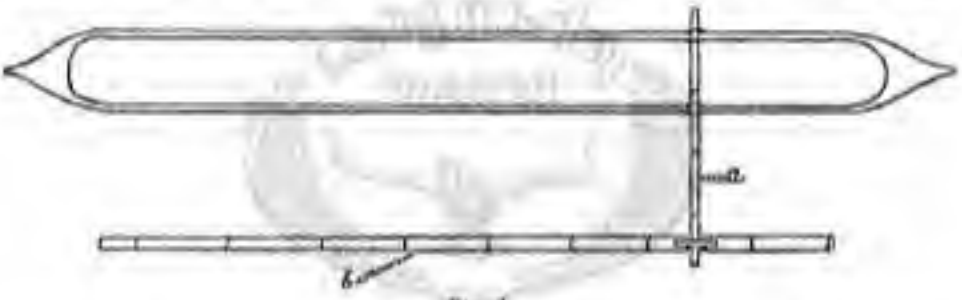


FIG. 1.

an oblique lashing secures the enlarged head of the stanchion to the body of the boom.

The second or Zanzibar variety of the stanchion, according to the figure given by H. Warington Smyth (*Mast and Sail*, 1906, p. 315), is a shortened, stumpy form of the Mombasa design. As this appears from the legend appended to be the fitting of a bum-boat, we may conclude that it is a coarse and rough type of attachment, in which case we may consider it to be a degenerate variety of the Mombasa type. As in the latter, the stanchion is obliquely placed; the upper end, being short, projects little above the boom, to which the head appears to be lashed, close down. As in the Mombasa design, the distal end passes through the float.

In the third, or Melindi variety, which hails from the Comoro Islands, the stanchion "is rendered more secure by two 'knees' or L-shaped pieces of "wood nailed to the *mguu* (stanchion) and the upper surface of the float; this is "the general attachment here" (at Melindi). It is not stated whether the stanchion is vertical or oblique; I presume it is the latter, as the float is described as inclined at an angle to the water.

The fourth form of stanchion is a stout quadrangular vertical peg; the lower end passes through the float, the whole secured by a careful system of lashing. The stanchion being vertical, the boom is brought directly under the ends of the

booms and rides horizontal in the water, instead of being canted inwards as in the Mombasa, Zanzibar, and Melindi forms.

In all of these varieties the boom passes through the shank of the stanchion; nowhere in the Indo-Pacific region *except in Java* does a similar method prevail; normally the stanchion passes vertically through the boom (in Geelvink Bay, New Guinea) or else it is lashed to its side (Indonesia and many parts of Papuasia and Polynesia). On the north coast of middle Java, in a locality where the outrigger has otherwise disappeared, there lingers, however, a small and degenerate type of outrigger of very primitive affinities. Unlike all the outriggers of east Java, Madura, and the adjoining islands, this has but a single outrigger and one boom only remains. (Fig. 1). Apart from its degeneracy, the point of interest to us is that the outer end of the single boom, usually a bamboo, passes through a hole in the upper end of a short vertical stanchion, of which the lower end is inserted near the forward extremity of a long bamboo float. The stanchion is wide and thin, made from a short length of plank. The upper end is rounded, the lower part somewhat narrowed to permit it to be jammed into a slot passing through the float. No lashing is usually employed; a wooden key through the boom on the outer side of the stanchion prevents the parts from coming adrift (Fig. 2).

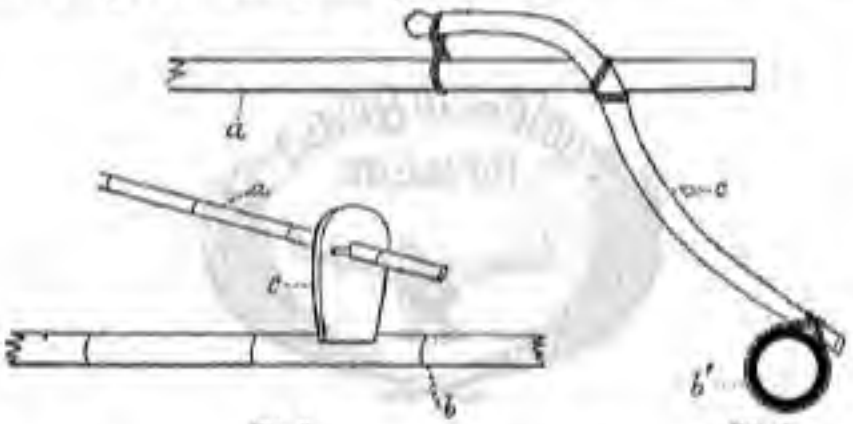


FIG. 2. FIG. 3.

This type of float attachment comes so close to the African forms that we may assume that the latter are more intimately related to this than to any other of the Indonesian designs. The difficulty that the Javan type is a single outrigger disappears in face of the facts that (*a*) this is obviously a degenerate design—the last lingering remnant of the type in a locality where otherwise the outrigger pattern has long been discarded in favour of properly built boats both for fishing and coasting traffic, and (*b*) the double outrigger is the normal and prevailing type everywhere else in Indonesia, including the east of Java itself. I feel satisfied that the African designs are modifications of a Javanese design introduced into Madagascar at some remote period prior to the decadence of the latter. The question however, remains as to whether the type of vertical stanchion or that of the oblique one was the one current at the time of outrigger introduction to the African region. As three out of the four African varieties possess oblique stanchions, we may fairly conclude that the oblique is the typical form. Indeed, the style of attaching the floats vertically beneath the ends of the booms may be considered a degenerative feature, as this is confined among double outriggers almost entirely to the corrupt Javan design and to the crude multiple-boom outriggers of Geelvink Bay.

Taking the Mombasa variety as nearest to the original type as introduced,

there is nothing precisely similar anywhere in Indonesia, but if we combine certain of the peculiar features of two types very common there with the perforated stanchion of the one described from middle Java, we get an approximation extremely close. The former are:—

(*a*) the oblique-stanchion type, and
(*b*) the Bali type.

The former is common in Lombok, throughout the Celebes and Moluccas, and in Ceram, Buru, and the Sula and Obi Islands; it is also to be seen well developed at Sorong and Saonek, in North-west New Guinea. This is without question the most widely distributed type in Indonesia; several variations exist, but typically it consists of a  -shaped obliquely placed stanchion; the elbow and short arm lie above the boom to which the stanchion is lashed in two places as shown in Fig. 3. In some cases the upper end is bent inwards from the elbow till it meets or passes below the boom (Lombok and Macassar). In others the short arm is carried a foot or so inwards, parallel with the boom and a few

FIG. 4.

inches above it (Fig. 3, from N. Celebes). The manner of lashing the head end is here identical with that seen in the Mombasa outrigger. The float, which consists in Indonesia almost always of a bamboo or cylindrical log, is invariably lashed to the under side of the lower extremity; in no case is the stanchion inserted into the float.

In the Bali type the connecting piece is no longer a stanchion; I believe this type to have evolved independently from one where the outrigger booms, being curved, were attached directly to the float; the latter method is suitable for small canoes with little freeboard, but when the size became enlarged and wash strakes were added, the booms had to be so deeply curved at each end in order to be attached to floats situated at water level, that trouble was experienced in obtaining suitable timber. To meet this difficulty a separate curved elbow was spliced to each end of the straight pole used as a boom; the farther end of the curved joint was made peg-shaped, and fitted through a hole passing obliquely through the bamboo used as the float (Fig. 4).

The Mombasa design appears to belong essentially to the first-named type, modified by combination with the archaic method of stanchion insertion seen in the North Java design. As we have the connecting piece pegged into the float, both in the Javan and Bali types, and as this is the method almost universally followed in Polynesia and Papuasia, we may infer that pegging of the boom connecting piece to the float is a very primitive contrivance; to lash the end of the connecting piece to the boom represents a subsequent improvement; pegging is a less secure method of attachment than lashing. It follows, therefore, that the present African patterns

represent an archaic Indonesian type belonging to a date prior to the adoption of lashing as a means of securing the float to the connecting piece. But the Boro Budur sculptures in Java, dating from the seventh or eighth centuries of our era, furnish representations of outrigger ships with lashed-on booms, hence the arrival of the pegged design in the Comoros and in Africa presumably must long antedate that period.

Regarding the linguistic side of the subject, several of the terms quoted by Mr. H. R. Montgomery appear to be of Dravidian origin. The use of the word *sukani* for rudder and *kona* for tiller is significant, both being in common use among the Tamil boatmen of South India in the forms *sukkān* and *kōṇā*. No Indonesian outrigger canoe is provided with a rudder, hence the use of Indian (Dravidian) terms for the two words named proves that the use of rudder and tiller in African outriggers is a comparatively modern innovation copied from Indian models.

No Indian outrigger in any way resembles the African design; all Indian and Ceylon forms are of the single outrigger type, and, in all, the booms attach directly to the float. In view of the statement in Dr. Haddon's paper that the Melindi outriggers are imported from the Comoro Islands, it is now important to ascertain whether this is also the case with those described from the other continental African ports named.

The two photographs (Plate G) accompanying this note represent respectively—

Fig. A.—A large built-up outrigger canoe belonging to Lombok. Booms with curved elbow pieces spliced and pegged on; the lower ends are inserted obliquely through the bamboo floats.

Fig. B.—A fishing canoe of Menado, N. Celebes. A dug-out with deep wash-strake. Used in seining. Stanchions, elbow-shaped; each is tied to the boom in two places. The Y-shaped crutches are used to carry poles and spars. (*Photos by J. Hornell.*)

The line figures in text are as follow: (1) Diagrammatic view from above of a canoe with a single outrigger from the north coast of Java.

(2) Method of attachment of float to boom employed in the same Javanese design. (After Van Kampen.)

(3) Elbow form of stanchion attachment in a large fishing outrigger canoe. Menado, N. Celebes.

(4) Spliced-on curved elbowpiece connecting the straight boom of a Bali outrigger with the float. (Belelang, Bali.)

Lettering: *a*, boom; *b*, float; b^1, float shown in transverse section; and *c*, joint connecting float and boom.

J. HORNELL.

Africa: Archæology. Smith.

Recent Finds of the Stone Age in Africa. *By Reginald A. Smith, F.S.A.* **56**

In 1915 Resident Magistrate Jansen, of Victoria West, Cape of Good Hope, sent to the British Museum a series of worked stones of peculiar character, but before making a formal presentation of them allowed me to bring them to the notice of this Institute. The delay can be easily explained, and the present opportunity has been taken to include two other African finds with nothing in common except their value as material for a study of the Stone Age in Africa.

A letter accompanying the consignment gives ample details of the discovery and a sketch-plan of the site here reproduced (Fig. 1). Though I do not adopt the descriptive terms used in the letter, the proposed division into two types is more than justified, if one may judge of the whole by the specimens sent to England. Both types (which I propose to speak of as hand-axes and tortoise-cores) are plentiful

in the district, but the latter are found only in certain spots; and the hand-axes occur either in conjunction with the cores or without them.

Victoria West (to quote from the letter) is the chief town of the magisterial district of that name, and lies in the heart of the great Karroo, in a narrow valley between two hills. Where the hills approach each other is a gap (Dutch *poort*) about 100 yards wide, but there was no break in prehistoric times, for trial pits have shown that the geological dyke was once continuous. The hills are composed of Beaufort shales covered by a dolerite cap which slopes down towards the *poort* beyond which was a prehistoric lake of about 150 square miles. This is proved by a typical lake-deposit about 24 feet thick, in which fossil reptilian remains have been found. It seems probable that the lake overflowed through the *poort*, which was the lowest pass available. This outlet must have accommodated a considerable river, which gradually wore down the dolerite dyke to the level where it has now been located, about 30 feet below the surface of the lake-deposit.

From the *poort* as a centre, the hills trend north-east and south-east, gradually drawing apart about a mile and then turning north and south respectively. The town of Victoria West lies in the valley east of the *poort*, and the river, which

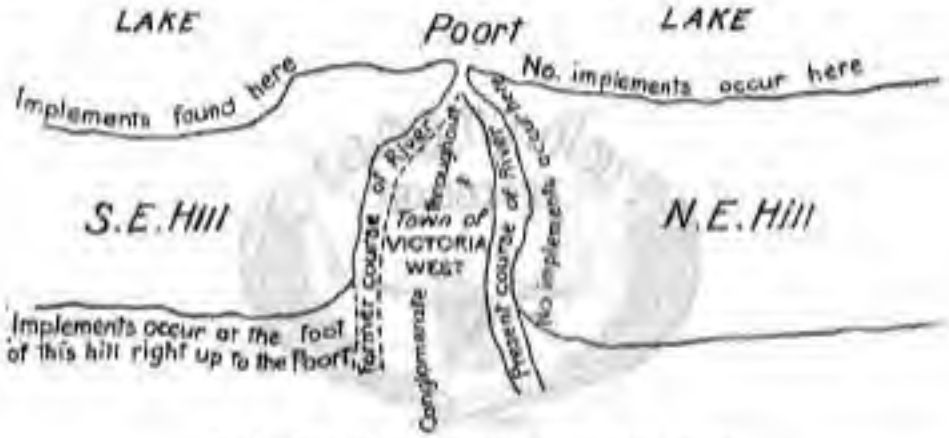


FIG. 1.—PLAN OF SITE, VICTORIA WEST, CAPE COLONY.

formerly flowed at the foot of the south-east hill on issuing from the lake, now skirts the foot of the opposite hill. Over the whole valley the river has deposited a conglomerate of boulders set in lime cement about 12 feet think, and along its present course has cut through this conglomerate down to the underlying shale, thus reaching its original level. The conglomerate is composed of seven or eight kinds of rock, but only two are now found on the hill-sides, dolerite and a sedimentary rock which occurs in bands in the shales. The others have not been traced to their original beds.

Tortoise-cores have been found on the bank of the ancient river to the south-east, the best coming to light in pits sunk by the R.M. in the course of his investigations. The conglomerate here is covered by alluvium to the depth of 12 feet, and several were found at this depth lying on the conglomerate, indicating that man lived on the conglomerate level before the alluvium was deposited. Several hand-axes, but no tortoise-cores, have been found in the conglomerate, where the alluvium has been washed away. About forty years ago a great cloudburst occurred above the *poort*, and the flood not only washed away the alluvium but cut through the conglomerate under the northern hill-side. Previously the river-bed had not been defined, and its present course was covered with dense reed.

Having found no tortoise-cores but only hand-axes in this conglomerate where that is exposed, the magistrate draws the conclusion that the implements are later than the cores, having presumably got into the conglomerate since the alluvium was removed; but I am inclined to draw the opposite conclusion. Apart from the type sequence observed elsewhere, it may be argued that the hand-axes were incorporated in the conglomerate before the alluvium was laid upon it 12 feet thick, and that the removal of the alluvium in some places has only laid bare an implement-bearing stratum that covers the entire valley. This point could obviously be proved by an extensive removal of the alluvium still in place.

Due south of the *poort* specimens of both types have been found on what was presumably the shore of the lake, but not a vestige of an implement has been detected on the north side, and an implement of any kind has been found along the foot of the north-east hill where the river now flows. On the east face of the north-east hill, however, hand-axes have been picked up, but the east slope of the south-east hill has produced both kinds in plenty, including all the weathered specimens in the collection. Owing to the configuration of the ground there, implements could not be buried to any depth. There is no alluvium and the specimens are found lying on the shale.

Similar discoveries have been made by the R.M. in the district at spots 15, 20, and 13 miles distant. The last site yielded cores of a somewhat different type but the implements were similar to those of Victoria West. Lydianite implements of Chellean type are mentioned from Vosburg, where they occur in a lime or cement conglomerate worked through by a small river. A very large deposit of tortoise-cores came to light at Zuur Kop, with longer points and shallower concavities than at Victoria West; also a remarkable series resembling a horse's hoof, not found on any of the other sites. Cores from Melton Wold are very rough and pitted, short and not beaked at the point and almost as broad as long. Such news is encouraging, as the comparison of geological features and technical details cannot fail to throw light on the prehistoric population of South Africa.

The hand-axes range from 6 inches to 3½ inches in length and are roughly flaked all over, the faces being equally convex and the butt fairly sharp. The sides are even and not twisted, with a regular taper to the point (Fig. 2). The best European parallel in flint is the type with two convex faces from La Micoque, Dordogne, assigned to the transition from St. Acheul to Le Moustier.

The tortoise-core is best known in Europe from Northfleet, in Kent, and Montières near Amiens,* and dates from the period of Le Moustier, being probably confined to that period. The core was prepared with the object of getting an ovate flake-implement from the upper face by a final blow on the facetted butt. This if successful was a special case of the Levallois flake. Those from Victoria West are rather pointed at one end, and are generally struck from the left edge near the point, as Fig. 3; in a few cases the detaching blow was delivered on the right of the point, as Fig. 4.

Of the series now presented to the British Museum the largest tortoise-core measures 10 in. × 5½ in., and is 4½ in. thick, and the smallest, which is circular and unstruck, is 3 inches across. Those illustrated are of average dimensions (Fig. 3, 7½ in. × 5½ in., and Fig. 4, 7½ in. × 5⅔ in.), and there are several examples of prepared cores from which the flake implement has not been detached.

The available evidence suggests that this technique was common to the north, south, and east of Africa, whatever the period to which it is to be assigned. Thus Mr. Henry Balfour found a number of small tortoise-cores at Victoria Falls, on the

* *Archæologia*, LXII, 515; and Commont, *L'Industrie Moustérienne dans la région du Nord de la France* (Beauvais Congress of 1909).

Zambesi,* and especially one fine flake-implement that corresponds exactly to those struck from tortoise-cores in Europe. About 600 miles due south traces of the same peculiar method have been discovered and already recorded by the Institute.

Specimens collected by Major E. R. Collins, D.S.O., at Meyerton, in the Transvaal, 9 miles north of Vereeniging, included one of spotted stone, 4·7 in. × 3·5 in., resembling a small tortoise-core like those described from Northfleet, in Kent, and Montières-les-Amiens, in the Somme Valley. One face is conical and the other convex, the latter perhaps intended for the upper face of a flake-implement, to be detached by a blow at the butt. It is worth noting that no specimens referable to the Neolithic period were found at Meyerton.†

A flake-implement of this same Northfleet type from Somaliland is in the collection of Mr. Buscall Fox, who recently presented to the British Museum a fine

FIG. 2.—DOLERITE HAND-AXE, FRONT AND SIDE VIEWS (½). VICTORIA WEST.

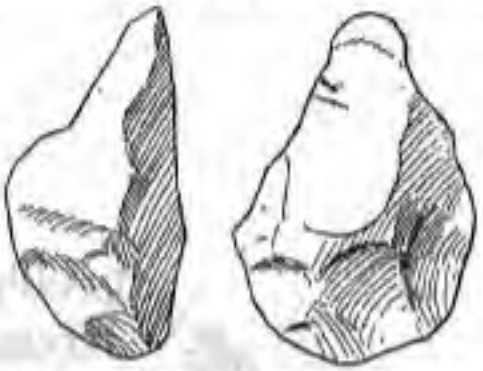


FIG. 3.—DOLERITE CORE, SIDE AND TOP VIEWS (½). VICTORIA WEST.

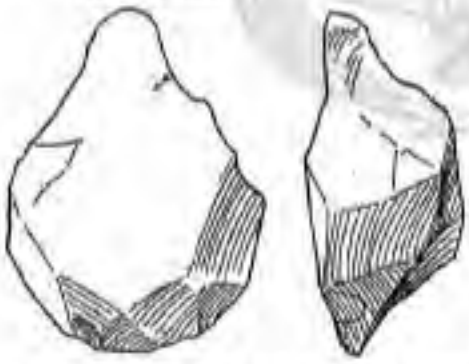


FIG. 4.—DOLERITE CORE, TOP AND SIDE VIEWS. (½). VICTORIA WEST.

FIG. 5.—TORTOISE-CORE, EGYPT, TOP AND SIDE VIEWS (½).

example of the tortoise-core from Egypt (Fig. 5), and there are several others in Dr. Sturge's museum. To judge from the illustration, the Northfleet industry extended into Syria, where a tortoise-core has been found at Beyrût.‡

Though flint or chert implements have been collected in abundance from Egypt, Tunis, Algeria, Mauretania, and the fringes of the Sahara, I can find no account of such discoveries in the Siwa oasis, and only one poor specimen, as poorly illustrated in the next large oasis to the south-west, known as Kufra.§ Captain Cunnington will some day give this series the publicity it deserves, but while he is at Salonika

* *Archæologia*, Vol. LXIX.

† *Journ. Roy. Anthr. Inst.*, XLV (1915), 86.

‡ *L'Anthropologie*, 1914, p. 7, Fig. 2.

§ Gerhard Rohlfs: *Kufra* (1881), 238.

I am privileged to include a sketch of it to make up an African programme for the meeting of 29th October, 1918.

A survey of North African finds in general is fortunately not required on the present occasion, but it may help future investigators to know that a short bibliography was published in *L'Anthropologie*, Vol. XVIII (1907), 548, and subsequent papers on the subject may be found in the *Comptes-rendus* of the Prehistoric Congress at Lons-le-Saunier in 1913.

I am indebted to Captain Cunnington for the following geographical details of a district not likely to be visited by Europeans after the war. Siwa, or the oasis of Jupiter Ammon, lies in the Libyan Desert, some 160 miles from the Mediterranean and 300 from the Nile. It had been reached by an occasional explorer before the recent military occupation, which gave the captain, during a stay of 11 months, an opportunity to explore the immediate neighbourhood and to make longer excursions 250 miles east and west, and northward as far as the coast.

This part of the desert consists of a limestone plateau terminating on the south in an east-and-west escarpment rising 500 feet above the sea, and descending 100 feet below the sea-level. A chain of oases flanks the escarpment on the lower level, and these vary from 5 to 10 miles across, being approached from the plateau by a number of ravines, which are cut through the limestone into the sandstone below.

Most of the flint implements were collected in a hilly area some 30 miles long and 10 miles deep, the escarpment overlooking the Siwa oasis having been cut up by hollows 200–300 feet below the plateau level. These hollows have a floor of grey alluvium, constituting "mud-pans" that may be ¼ to 1 mile in diameter. Round the edges and on the surface are loose stones, and in most cases an abundance of worked flints, which appear to be mainly palæolithic. On the original banks ancient fire-places with burnt earth are numerous, and specially abundant in their immediate vicinity are arrow-heads and pygmy flints. In fact, the latter do not occur except within a few yards of the fire-places. But still it would be unwise to regard this connection as essential.

These pans are all within two days' march of water, and many of them appear to have had at some time a certain amount of rough vegetation growing in them. Specimens probably of many prehistoric and historic periods can be found in their neighbourhood, including mealing-plates, mealing-stones, and querns dating apparently from the Dynastic period of Egypt.

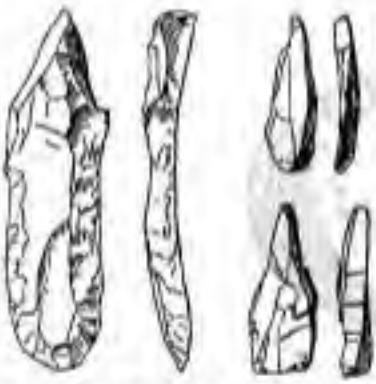
On the high plateau is a different type of mud-pan, varying from 50 yards to 5 miles in diameter. These occur all over the desert between Siwa and the coast, and most of them support, at least in winter, a considerable amount of camel scrub. The baked mud of which they are composed may be of great depth. A pit of 25 feet was sunk without reaching bottom, and the material was found to be uniform in quality, with no stones or other *débris*.

These high-level pans are not necessarily surrounded by hills or confined within steep banks; and the worked flints occur on or near the circumference, not all over the surface as on the grey mud-pans at the lower level. On the plateau sites undoubted palæoliths were rarely met with, the ordinary forms being arrow-heads, knives, and small scrapers; and these are not found in any quantity except within 12 miles of an oasis, on which the inhabitants depended for water.

Some of the smaller pans near the oasis produced most of their arrow-heads at the south-eastern angle; and the captain suggests that the neolithic settlers hunted on the high ground with bow and arrow, and camped on and round the mud-pans in the hollows of the hills, which had occupants for many generations before and after the later Stone Age. The remains are here very mixed, and working-sites or "factories" are common in the neighbourhood, the loose surface harbouring needles, pygmy flints,

boring tools, and other definite types. These grey mud-pans lie between sea-level and 300 feet above it, and it is worthy of note that no flint implements were found in the ones below sea-level, on the hill-tops or in the high plateau away from the mud-pans.

Of the hasty selection of specimens shown at the meeting, a few are here illustrated, and bear a striking resemblance to recognized types of the palæolithic cave period, barring the arrow-heads, which are long and gabled with tang much like the type found in Scandinavian dolmens; barbed and tanged like those found commonly in Europe; and pointed oval or leaf-shaped. The battered backs (*à dos abattu*) average 1½ inches in length, and so are not strictly pygmies, but agree with some late Cave deposits. Well-developed gravers occur (Figs. 6-8), and leaf-shaped blades with attractive colouring (Fig. 9) are highly suggestive of Solutré. Cones (as Fig. 10) are included, and are more likely to be planes than cores for pygmy implements; and there is an interesting specimen of the segmental tool ("tea-cosy") with crust on the base (Fig. 11), proving that it is not the broken end of a celt. Another with one flat face stands firmly on its base.



FIGS. 6-8.—GRAVERS, SIWA OASIS, FRONT AND SIDE VIEWS (½).

FIG. 9.—LEAF SHAPED BLADE SIWA OASIS (½).

FIG. 10.—CONICAL PLANE, SIWA OASIS, (½)

FIG. 11.—SEGMENTAL TOOL, SIWA OASIS, FRONT AND SIDE VIEWS (½)

A cherty specimen, 4 inches by 3½ inches, is certainly of poor workmanship, but may perhaps be allied to the tortoise-core, which seems to be at home in Africa.

Colour is lent to this idea by what should rank as a point of Le Moustier type, with a thickening at the apex of the triangle suggesting an approach to Aurignac technique, as does also a steep-ended scraper, nearly 2 inches long, with rather angular outline and a median ridge. Two large planes, with the working edge at the side and end respectively, cannot well be assigned to any industry but Aurignac, and can be matched in France if not in England. Tabular flint, generally very thin, was largely used for knives, which are more or less serrated.

To quite a different category belong the stone celts shaped by grinding which were sent for exhibition by Mr. F. Mitchell to Mr. Lamplugh, of the Geological Survey. They were found on the property of Ex-lands Nigeria, Ltd., at Narkaru camp on the Bauchi Plateau, in Sho, about 122 miles south-east of Bauchi (Yakoba). The axes are always at the bottom of the "wash," which may be 8 feet or 10 feet thick. This wash occurs below a loamy alluvium which runs up to a few feet in thickness, but is variable. It is stony and contains tin ore, resting on decomposed granite. The natives have no knowledge of the stone implements and no idea of

their origin. Trunks of trees are occasionally found in the wash, which tells against a high antiquity.

Fig. 12.—Black volcanic stone celt with oval section and bluntly-pointed butt. The cutting-edge is nearly central and ground on both faces. The sides and half the faces towards the butt end are left rough, no doubt to facilitate hafting. Length 5½ inches.

Fig. 13.—Celt with pointed oval section, of bluish-grey colour, and gritty composition, ground only on the faces near the cutting edge. Length 3¾ inches.

Fig. 14.—Celt of soft yellowish clayey stone, with flat faces, ground only near the cutting-edge. Length, 2¾ inches.

Fig. 15.—Small celt of hard black volcanic stone, the sides and faces ground nearly all over, and the faces nearly flat, the butt being rounded but not thinned. Length, 2¾ inches.

The above were found probably at 10 feet to 25 feet from the surface, and exhibit an unexpected variety of form and material; and this impression is strengthened by a series submitted since the meeting by Mr. F. J. Waters. One is half an inch longer than Fig. 12, but otherwise identical; another, 7½ inches long, is made of the same gritty stone as Fig. 13. The single squared side of a specimen 5 inches long, is due to natural cleavage and cannot be regarded as typical, any more than the flat face of another smaller specimen with rather pointed butt. One with the butt missing has fairly flat faces and in the middle of each a bruised area; and a small specimen of impure quartz 3·2 inches long is broadest about the middle and narrows a little to the polished cutting-edge.

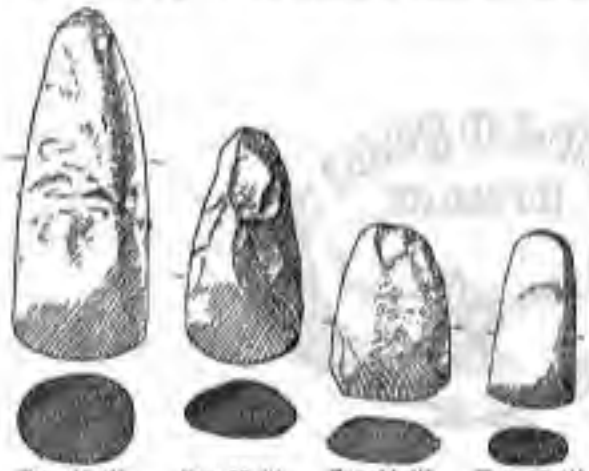


Fig. 12 (½). Fig. 13 (½). Fig. 14 (½). Fig. 15 (½).

NEOLITHIC CELTS, BAUCHI PLATEAU, NIGERIA.

From these and the British Museum series from Nigeria it is clear that the neolithic celt varied considerably in material, size, outline, and section. The same might be said of European specimens, but the variation nearer home can to some extent be explained by the evolution of one type from another, and a chronological sequence is already established for some districts. Something may yet be done in the same direction for Nigeria.

REGINALD A. SMITH.

Burma. **Brown.**

A Burmese Fishing Custom. *By R. Grant Brown.* **57**

In the fisheries of the upper Irrawaddy a rite is practised at the beginning of each fishing season in honour of Pyindaunggwlaw, or the Lady of Pyindaung, a village on the Shwali River, in lat. 24°, long. 96° 32'. The legend is that she was a rich and amorous dame who lent money to fishermen for the construction of their weirs and received payment in fish, with which she bought the favours of all the young men who took her fancy. As she always tired of her lovers, she died an old maid. I witnessed the ceremony at the Yaukthwazaung fishery, about two miles

from the Irrawaddy, in lat. 23° 47', long. 96° 14'. At the head of the lake were ranged a number of miniature bamboo houses: one for the Shweli Sawbwa (formerly the local ruling prince), one for the Dragon of Tagaung,* one for the spirit of the founder of the fishery, and one for the Thirty-seven Nats, or national deities—for Burma has a national religion far more ancient than Buddhism, and nowhere entirely suppressed, though greatly discredited. Apart from these, as of inferior rank, the Old Maid of Pyindaung and the spirit of a successful master-fisherman of recent years have each a house with a lower floor than the rest. There are also altars to others who have worked the fishery for prolonged periods, and even to a carter who, after a life spent in carting fish, is believed to have become a *nat*, or wandering spirit; and the humbler workers are not forgotten, for branches of trees are planted in the ground in honour of such of them as may have met a like fate.

The ceremony is held at night in front of a straw figure, dressed in woman's clothes and representing the Old Maid. A man (for no women are present) speaks for her, and sits behind the figure. He is supported by a person who takes the part of her father, and by others who represent watch-dogs. Opposite her dances a young unmarried man called the Sawbwa-gyan. Sawbwa is the Shan title for a ruler, and the adjective means low, vulgar, so that the youth corresponds to the Lord of Misrule with which *The Golden Bough*† has made us familiar. He supports against his middle a phallus about two feet long, and sings an obscene song to the accompaniment of the usual Burmese band. At intervals between the dances is parleying, in very gross language, between the parents of the man and woman, and a dowry of fish is offered on behalf of the latter. The watch-dogs, with much barking, keep off the bridegroom till the bargain is concluded. When this happens the straw figure is stripped and held up by two men, while the youth inserts the phallus in a hole in the middle of the figure and goes through an imitation of the deed of kind.

It is hardly necessary to point out that we have here another instance of imitative magic, performed with the object of making the fish multiply; and that, while the amorous spinster of Pyindaung may very well have existed, the rite is probably of far older date—as old, perhaps, as the art of fishing.

R. GRANT BROWN.

Yoruba: Folklore.

Wyndham.

The Creation. *By J. Wyndham.*

58

The relationships of the various gods are differently stated by different chiefs and priests of Ife, and also by the same men at different times.

It appears, however, that Arúmfè ruled in Heaven, and sent his sons, Odúwa and Orisha, to a dark and watery region below to create the world and to people it. According to the legends told in Ife, the gods were not sent away as a punishment; but there is some story of wrong-doing mentioned at Owu in the Jébu country. Arumfe gave a bag full of arts and wisdom to Orisha, and the kingship to Oduwa.

On the way from Heaven Oduwa made Orisha drunk and stole the bag. On reaching the edge of Heaven, Oduwa hung a chain over the cliff and sent down a priest, called Ojúmu, with a snail-shell full of magic sand and a "five-fingered" fowl. Ojumu threw the sand on the water, and the fowl kicked it about. Wherever the fowl kicked the sand, dry land appeared. Thus the whole world was made, with Ife as its centre.

When the land was firm, Oduwa and Orisha let themselves down the chain, and were followed by several other gods. Orisha began making human beings; but

* See *Journ. Roy. Asiatic Society* for October, 1917. † *The Scapegoat*, p. 331, etc.

all was dark and cold, because Aramfe had not sent the sun with Oduwa. So Oduwa sent up, and Aramfe sent the sun, moon, and fire. [Fire was sent on a vulture's head, and that is why the vulture has no feathers on its head.] Then the gods began to teach their arts and crafts to men.

After many years Orisha made war upon Oduwa to get back his bag. The various gods took sides, but some looked on. The medicine-men provided amulets for the men on both sides. Aramfe was angry with his sons for fighting and threw his thunderbolts impartially—for he was the god of thunder in those days. The war is said to have lasted 201 years, and came to an end only because the gods on Oduwa's side asked him to give back the bag. Oduwa, in a huff, transformed to stone and sank beneath the earth, taking the bag with him. His son, Ogun, the god of iron, then became king.

Another age passed and there was another war in Ife. Some colonists had made a settlement at Igbo (or Ubo), and after some years they made war on their fathers (the gods) because they had given them nothing. The gods drove them away; but the next year the colonists came again dressed in hay all over, frightened the gods' adherents and defeated them. Oranyan, son of Oduwa or of Ogun, was the leader on the side of Ife in this war. After the defeat, Mórimi (the great heroine of Ife) decided to make medicine to conquer Igbo. She took six goats and six bags of kowries for her sacrifice and gave a feast to her children. She gave Esho some of the food. According to one story, Esho entered into an Ubo man and caused him to betray the secret to Morimi; the other story is that Morimi went as a harlot to Ubo and thus found out what she wanted to know. In the meantime the gods, disgusted with defeat, had transformed to stones, rivers, &c., and only Ogun remained. Morimi told Oranyan to have fire ready for the next Ubo invasion, and the Ubo warriors were burnt to death. This victory is celebrated every year by the Edi Festival. According to the story, the widows and children of Ubo who were brought to Ife as slaves asked permission to wear their dress of hay every year to worship their fetish (Olubo); and this was granted, but they were told they must run on sight of Morimi's fire. This is still done, and fire is taken out of Ife to the bush as a part of the ceremony. It seems not unlikely that the meaning of the ceremony has to do with farming, as the Yorubas burn the bush to prepare for farming. Edi takes place in December, and Igbo (or Ubo) means the bush. Morimi ordered free-love for the seven days of her festival.

After the Ubo War, Oranyan seems to have spent many years in and around Oyo—while Ogun remained king of Ife. Ultimately, Oranyan returned and displaced Ogun, who "went away."

From Ife the whole world was peopled. The white races are descended from Ólúorógbo, a son of Orisha.

At an earlier date Morimi, having only one child (a daughter), was advised by Ifa to sacrifice the girl. After that she had many sons. [Offun Kanran was Ifa's messenger.]

J. WYNDHAM.

REVIEWS.

Psychology. **Rivers.**

Dreams and Primitive Culture: a Lecture reprinted from the "Bulletin" of the John Rylands Library, 1918. By W. H. R. Rivers, M.D., F.R.S. **59**

An original and very interesting comparison between the mental processes by which, according to Freud, dreams are produced, and those that are manifested in the rites and observances of crude culture. Without entirely assenting to Freud's theory, Dr. Rivers justly regards it as a work of genius; and he considers it to be in some degree corroborated by the parallels he finds with it in savage practices.

A dream, in Freud's analysis, has (1) a *dramatic* character which disguises its true latent content of thought and emotion; and the dream-images of persons and things, or some of them, are concrete (2) *symbols* of those motives. Some image or images, again, may, (3) by *condensation*, represent events stretching back to the dreamer's infancy; or a life-preserver may be a condensed expression of a physician's relations with an homicidal patient and, at the same time, of his anxieties concerning a suicidal patient. Condensation involves (4) *displacement of interest*: an emotion originally attaching to one object or person is transferred to another, perhaps to an apparently insignificant one. This is the work of (5) the *censor*, a power of the unconscious mind that determines which of our unconscious thoughts shall come to the surface in dreams, and in what ways, by (6) a *secondary elaboration* of the dream, to make it more presentable. Further, every dream is the fulfilment of a wish, actuated chiefly by sexual motives.

Comparing these characteristics of the dream with those of primitive culture, Dr. Rivers observes that (1) dramatisation is very common in savage life, and a natural consequence of the way in which the thoughts and memories of the uncultured depend (more than ours) on mental imagery; to act out such ideas strengthens their hold upon them and facilitates tradition. (2) Symbolisation, again, is universal among such people; as Mota (Banks Islands), *e.g.*, a native, marking out a plot of ground for an unborn child, carries as a symbol of the child a coconut under his left arm or on his left shoulder. (3) The same example illustrates condensation; for the use of the nut as a symbol of the child is, under thorough determinism, "the final and "highly condensed product of a long and complex chain of events"; it represents the head, and the head is often in other ceremonies represented by a coconut, and is widely regarded as sacred; and (though this is unknown in Melanesia) in Indonesia, whence Melanesian culture has been much influenced, it is believed to be the seat of "soul-substance." It therefore also illustrates (4) the displacement of interest; for the belief in a vital principle residing in the head has led to the use of a coconut to represent an unborn child. (6) Secondary elaboration may be traced in the different practices that have been derived from this same belief in a vital principle dwelling in the head, such as the complex religious ritual of Solomon Island head-hunters. (5) Disguise of meaning and censorship are involved in the mystifications practised on the populace by priests and sorcerers who have esoteric knowledge; such mystification reaches its acme in the secret fraternities which, in Melanesia, give their doctrines dramatic expression. As for wish-fulfilment, many rites have this character; but others are based on grief or on fear. Similarly, sex-motives are frequent in primitive social behaviour; but the instinct of self-preservation is more important.

All these resemblances between the mechanism of dreams and phenomena of primitive culture—both being manifestations of the human mind—do not, in Dr. Rivers' judgment, imply the truth of Freud's scheme, but lend it some support, and point to their both being due to processes of an infantile or early stage of mental development. Moreover, as dreams arise out of the unconscious and their true motives may have been forgotten, though discoverable by psycho-analysis; so the origin and meaning of rites and customs are usually unknown to the savages who practise them, and yet may be brought to light by scientific study.

One is tempted to adopt a saying of Galton to his friend Herbert Spencer—"your theory is so beautiful that it ought to be true." And in one sense Dr. Rivers' theory is true; all the characters he enumerates are found in primitive observances. But have they any *special* connection with the phenomena of dreams? According to Freud (as I understand him), all these characters should be looked for in a single dream of an adult man or woman; and to preserve the parallel they ought to be

exhibited in a single rite, or in a connected series of rites; whereas the Mota gardener, with his coconut, presents only three—symbolisation, condensation, and displacement of interest. Then, the symbolisation is not unconscious, as a Freudian symbolisation should be: the Mota man means the coconut for his child; whereas a dream-symbol is supposed to represent some "buried complex." As to condensation, again, should not the carrying of a coconut, considered as "the final . . . product of a long and complex chain of events," be called simply an *effect* rather than a condensation? A condensation (as I understand it) is a representation of at least two chains of events; like the life-preserver above-mentioned, which stood for relations with an homicidal and also with a suicidal patient. Thus the coconut would be a condensation if it had descended from a forgotten past when it was used as symbolic of an unborn child, and also stood for a forgotten totem of the gardener's clan. But an effect is any event in nature or mind, dreaming or waking; and it must be due to (though how does it condense?) an infinite series of antecedents. Displacement of interest, finally, is apt to accompany symbolisation, and tends to obscure the thing symbolised; as when a fetish becomes an amulet, and its former spiritual power is forgotten; but with the coconut interest has been displaced from one thing symbolised (the vital principle) to another (the unborn child) in no way obscured; and this has happened, not in the mind of an individual, but in the course of generations and by passing from one country to another.

I hazard these criticisms without much confidence of being right; but they seem to me to lead up to a profoundly interesting tendency of this lecture, namely, its indication of universal mechanisms of the human mind and not merely characteristics of dreams and primitive culture. Symbolism, condensation, and transfer of interest are nowhere more clearly displayed than in abstract thinking: symbols (mathematical or linguistic) lead the mind, which condenses facts into a generalisation, and interest passes from the particulars to the formula. Perception is symbolic of objects, which are condensations of sensory data. Memory is symbolic, and is very liable to distortion by condensation, displacement of interest, censorship, and dramatisation. Such distortions are the essence of imagination as expressed in poetry and myth. If dreams and primitive rites show an infantile mentality, then, it is not in the mechanisms involved but in the crudity of their development.

As to dreams, if (as some think) the brain during sleep is dissociated, deep sleep may be dreamless. As the curve rises toward the waking level, reassociation may be supposed to set in, accompanied by the rudiments of thought and impulse, but all chaotic until the moment of waking. As soon as consciousness revives, it sets as its habit is—tries to make sense of the given materials: and, so far as the given materials are impulsive, sense can be made of them only by dramatisation. If the first draft of the play is unsatisfactory, consciousness may proceed with a secondary elaboration: at any rate there is great likelihood of this in reporting the dream. The impression some dreams leave of having lasted a considerable time is probably an illusion. Such extempore dramatisation must be symbolic, and is pretty sure to condense and to disguise the true content of the foregoing chaos; and it now seems certain, from Dr. Rivers' own investigations, as well as from those of orthodox Freudians, that what that content was can often be discovered by psycho-analysis, and that it may be derived partly from recent, partly from some long past and forgotten experience. Dr. Rivers promises us an account of his own investigation of dreams, carried out whilst engaged with psycho-therapeutics in connection with our late troubles; and we may confidently look forward to his placing many of these things on a sane footing.

CARVETH READ.

Philippines. Benedict.

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A Study of Bagobo Ceremonial, Magic, and Myth. By Laura Watson Benedict. Reprinted from the *Annals* of the New York Academy of Sciences, 1916.

Since the American occupation of the Phillippines a scientific survey of the natives has been undertaken. The results at first were published by the Department of the Interior, commencing with Mr. Jenks' elaborate and valuable study of the Bontoc Igorot. But these publications were after a while dropped; and since then the reports have had to find publishers where they can. The present study was submitted in partial fulfilment of the requirements for the degree of Dr. of Philosophy in the Faculty of Philosophy of Columbia University, and published in the *Annals* of the New York Academy of Sciences. It may be said at once that it is a most important contribution to our knowledge of the natives of the archipelago, and emphasizes the regret that all students of anthropology must feel at the discontinuance of the systematic publication by the Government of the results of the survey in unbroken series.

The material was gathered on the spot, in the years 1906–7. Dr. Benedict is a close and shrewd observer, and made the best use of her time to gain the insight she discloses into the customs and mode of thinking of the tribe she chose for investigation. She describes the Bagobo as "one of those Malay cultural groups in "the mountainous country of south-eastern Mindanao, which have retained their pagan "faith in its entirety, and have never accepted the religious dictates of Islam," nor it may be added, of Christianity as presented by the Roman Catholic missionaries who tried spasmodically to win or coerce them into that faith. Unfortunately, unlike Mr. Jenks' account of the Bontoc Igorot, Dr. Benedict does not include in her purview the whole of the culture of the tribe. This throws her study of the religious side somewhat out of perspective, and causes it to hang, so to say, in the air. However, she was compelled by the necessities of the case to present a considerable portion of the culture, not directly religious, either by way of formal statement or allusion, in order to explain many matters connected with the ceremonial and belief of the tribe. A part of the material essential for the understanding of the Bagobo practices and faith had been previously published in the *Journal of the American Folklore Society*. It consists of folk-tales embodying much of the religious and other lore of the Bagobo; and reference to it by the reader of the present study is frequently necessary.

The religion of the Bagobo, we are told, "is characterised by the highly sacri- "ficial nature of public and private ceremonial; by the composite make-up of the "rites, in which are blended both offerings of the blood of slain victims and "agricultural products; by the non-esoteric character of the religious life of the "community, when the people—women, young men, children—are freely admitted as "spectators of almost all ceremonies, and as valued participants in many of them." The Bagobo recognize a number of gods presiding in the nine heavens or resident in the earth. Though some of them are specially valued in relation to the life of the people, none of them is regarded as supreme—not even Lumabat, the god of the first heaven, or Pamulak Manobo, the creator; nor even Malaki t'Olu k'Waig, "who represents the "highest ideal of goodness and of purity, as the native visualizes that ideal." More regarded than most of the gods, because more feared, are the Buso, demons of various kinds, all more or less hostile to mankind, and many of whom are the evil souls of the dead. Everyone is believed to have two souls—the Gimokud Takawannu, or right-hand soul, which goes to the place of the dead, similar in all respects except its shadowy nature to this earth, and the Gimokud Tebang, or left-hand soul, which becomes a Buso. The cult of the dead is practised, its chief object

being to persuade the Gimokud to remain as far from the living as possible, "for there is clearly a lurking fear that the dead spirits may return and draw the "living after them."

The chief religious festival is that of Ginum, or drinking festival, at which the gods drink the blood of the sacrifice, and the people the ceremonial thick sugar-cane liquor. Its object is to secure prosperity, and chiefly the fruits of the earth. Human sacrifice was an essential feature of the feast, for which head-hunting expeditions were probably undertaken. Both head-hunting and human sacrifice are, however, now inconvenient; and the gods are compelled to put up with apologies throwing the blame on the American Government, and with the substitution of nothing more valuable than a chicken.

This festival is minutely described. A large section of the study is also concerned with the magical rites, the treatment of disease, the spiritualistic *séances*, or, as Dr. Benedict calls them, "interviews with the gods," the influence of a system of tabus, of omens and dreams, and with the marriage and death rites. All these are worthy of the closest attention.

Finally, a separate section deals with the problem of the sources of ceremonial and myth. It is a sane and careful enquiry, in which the many influences likely to have modified the original inheritance are canvassed. The field of comparison, however, hardly goes beyond the Malay area. Some of the most difficult problems are thereby avoided. Had the outlook been widened, it is likely that many of the provisional results would have been modified. The funeral customs, for instance, noted as common to all Malays are almost all of them, in one form or other, to be found among a great variety of peoples and over an area not coincident with that of Malay influence. The use of the winnowing basket, too, might have raised some interesting questions. And these are only samples.

It may be added that Dr. Benedict found the pigmented sacral spot, much discussed some time ago, on several Bagobo babies that she examined, and was told by the women that all babies had it. They believe that if it be absent the infant will soon die; therefore they take magical measures, here detailed, to ensure its presence. Such is the meticulous care which Dr. Benedict has bestowed on her work. The results are correspondingly valuable. E. SIDNEY HARTLAND.

ANTHROPOLOGICAL NOTE.

Accessions to the Library of the Royal Anthropological Institute. 61

(*Donor indicated in parentheses.*)

Notes on the Tribes, Provinces, Emirates and States of the Northern Provinces of Nigeria. Compiled from Official Reports, by C. Temple. Edited by C. L. Temple. 8½ × 5½. 5[illegible] pp. Argus Printing and Publishing Co., Ltd., Capetown, 1919. (The Author.)

La Préhistoire, Première Partie introduction à l'Etude de la Préhistoire de la Belgique Elements de Préhistoire Generale. Par A. Rutot. 10 × 6¾. 161 pp. Numerous Illustrations. Les Naturalistes Belges. (Musée Royal d'Histoire Naturelle de Belgique.)

The Evolution of the Dragon. By G. Elliot Smith, M.A., M.D., F.R.S. 9¾ × 6½. 234 pp. Illustrated. Longmans Green. 10*s.* 6*d.* net. (The Publishers.)

World-Power and Evolution. By Ellsworth Huntingdon, Ph.D. 9 × 6¼. 276 pp. Oxford University Press. 10*s.* 6*d.* net. (The Publishers.)

Eyre and Spottiswoode, Ltd., His Majesty's Printers, East Harding Street, London, E.C. 4.

KILLICKS.

ORIGINAL ARTICLES.

Marine Evolution. With Plate H. Nance.

Killicks. *By R. Morton Nance.* **62**

One of the oldest of crafts is that of the long-shore fisherman, who, while his deep-sea brother is rapidly borne further and further from all primitive ways, keeps still on such old fishing-grounds as the trawlers may spare him, setting his lines and pots as they were set by his ancestors before him, and preserving many ancient things that, amid the welter of wholesale fish-getting, have been lost by the men of the drift and trawl fisheries. Among such men, now, must one look especially for survivals of the taboos and omens of prehistoric fishers, for the old local names of fishing-grounds and the creatures that inhabit them, and for the oldest existing gear with which these may be caught.

In West Cornwall we have a ready name-test for the age of such things, for down to the end of the seventeenth century at least our fisherpeople were more familiar with their own Celtic language than with English, and accordingly many of them bear names that are only to be explained by reference to Old Cornish, or failing the remnant of that language, to its Brythonic fellows, Breton and Welsh. Thus, when we find that a rod around the end of which a cluster of hooks is bound grapnel-wise is called a "gulaneng" (*gwialen hig* = hook-rod) we know that this contrivance for taking cuttle-fish is no novelty; when we hear a makeshift fire-place in a boat called "meenollas" (*mên olas* = hearth-stone) and find that, although no Cornish fisherman now lights his fire upon a flat stone, his Breton cousin still has a boat-hearth that is literally a *mên oalad*, as he would pronounce it, we know that we may be in touch with something that dates back beyond the migration of South Britons to Armorica. It is a little curious that this one use of a stone in connection with fishing should survive in a name only, for of other stones we have so many use-uses that to a large extent the Cornish fisherman lives still in the Stone Age. He no longer, it is true, like fishermen in some more backward parts of the British Isles, ties stones to the bottom of his herring net, but he still uses them as sinkers for his crab-pots, as ballast for his boat, and as mooring-weights for his fishing tackle. In the seine-fishery he uses one that, tied to a rope and dashed in and out of the water, drives the enclosed school of fish away from the open ends of the net until these can be finally secured—the "cabooly-stone," or "caboolen," whose name suggests both Welsh *cyhol* [holding], describing its use, and *cabol* (bright, shining), apt as to its light colour; another, too, the "pressing stone," he has only of late years ceased to use as a weight to express the oil from his barrels of pilchards packed for export, while to moor his boat, most of his fishing-grounds being so rocky as to form anchor-traps rather than moorings in the ordinary sense, the men of the Western coves uses a stone, that if lost is at least easily replaced.

These stones, to fit them for use as anything but mere ballast, must in almost every case be to some extent hand-wrought, the amount and nature of such work varying according to their purpose and the kind of stone available; thus, when the rock is slaty it is most simple to notch its edges on opposite sides to give holdfast for a rope, while, as granite or other harder rock of irregular cleavage supplies waterworn boulders, these are given a groove about their middles for use as "strop-stones," are drilled for the insertion of a hook to make "pressing-stones" or a ringbolt to make "plumping-stones," or even bored right through to give the very secure hold needed for a "caboolen."

Of all such sea-stones* the highest antiquity may, perhaps, be claimed for the

* These have been treated at greater length in my paper on "Sea-stones and Killicks in West Cornwall" in the journal of the Society for Nautical Research, *The Mariner's Mirror*, Vol. III, p. 225.

"strop-stone" as anchor; but this, although in daily use just around the Land's End, is quite obsolete in most other coves, and the variety of home-made anchors, or "killicks" as they are commonly called, that are and have been used in Mount's Bay alone, enable us to trace without difficulty the path taken by an anchor of iron in its evolution from the original mooring-stone.

In this evolution we may take as starting point the stone, not so easily met with, that breaks from its native rock-bed already endowed with loins, so to speak, that might keep a rope-girdle from slipping off. From this stage, however, the advance must have been almost immediate to the next, where a stone almost suitable is made perfectly so by the removal of some superfluity; for it is hardly to be thought that the man capable of shaping any sort of boat would be satisfied to spend hours in hunting for a neat-waisted stone when by a few blows against a harder rock he could make available the material at hand. From this again, the next stage, where a selected stone is smoothly grooved about its middle, would rapidly follow, for the labour spent on this work would soon prove its worth, as the annoyance of chafed, parting ropes and lost strop-stones ceased. Another development, in which, as in the already-named "calloolen," the stone is bored through, was, as far as the anchor is concerned, a blind-alley movement; but that which led to the formation of the first real anchor, by adding to the weight of the stone the holding power of flukes, must itself have been of very early invention, for the distribution of this stone anchor, with its peculiar frame of wood, is even wider than that of the coracle, and is more on a level with that of the dug-out canoe.

Jal (*Glossaire Nautique*, p. 130) quotes Pâris as his authority for stating that such anchors, in use in the Indian and Chinese seas, were like those of Iceland and Norway,* and Koster's *Travels in Brazil*, 1817, shows us a native Brazilian raft or *jangada* with just such an anchor. In Newfoundland, again, we find them,† but it is not necessary to conclude that the Newfoundland "killick" is a loan from the natives to early settlers, for it seems most likely that this, with its name, was brought from the old country by fishermen colonists. The word "killick" is stated in the *New English Dictionary* to be of unknown origin, but the quotations there given‡ show it to have been used of some sort of boat-anchor as far back as 1630, and that its modern extension to anchors of a larger kind is only by way of jocularity. In Cornwall it was formerly appropriated to boat-anchors of wood and stone only, and even now it is in Mount's Bay applied to the home-made boat-anchor alone.

In English, then, we shall probably be correct in calling the contraption shown in Fig. 1 a "killick." This is drawn from a model in which I have closely followed the description given by Jal; but it would serve almost as well to represent the anchor of Koster's *jangada*. Here two crescent-shaped timbers are placed saltire-wise one upon another, a pair of rods being set into holes bored in each and held in place by pegs. On the middle of the upper crescent and enclosed by the four rods is placed a boulder, in this case lashed to hold it down, and finally the four rods are lashed together above, the mooring-rope being made fast at the lashing. When dropped to the bottom it will be seen that the pull of a drifting boat upon the rope must at once bring two points of the crescents to bear upon the ground, one of which in practice will probably enter and hold before the other, thus acting exactly as the flukes of an anchor, while the other point serves as a stock. In the *jangada* anchors (Figs. 2 and 3) drawn from models in the Science Museum, South Kensington, the cross-pieces are not crescent-shaped, but flat and somewhat boat-shaped,

* See also *The Mariner's Mirror*, Vol. IV, p. 249, for a note on this.

† Described by "C. A. G. B." in *The Mariner's Mirror*, Vol. IV, p. 81.

‡ With variants: Killock, Killecke, Kellog, Keelog, Kellock.

in the larger one (Fig. 2) being given flukes of a sort, and let into one another's substance so as to give the stone a flat base upon which to rest; the four rods, too, torn from the tree so as to leave a thickening at the butt-ends that prevents their being drawn up through the hole, are gathered together and lashed a little lower down, so as to project aloft like the poles of a wigwam, thus giving a good hold for the cable. The Newfoundland killick (Fig. 4) is almost the same, but the rods used being of a supple kind it has occurred to the fishermen there to work the four projecting tips of these into a neat loop or eye to serve as an anchor-ring; this, however, looks like a "modern improvement," and we may guess that the British killick of 1680 and earlier was more like Fig. 5, drawn from a reconstruction of my own.

From this assembled four-armed grapnel of wood and stone, which seems to have had "crab-claws" as a name as well as "killick," it is easy to see how, directly iron became available, the four-armed but homogeneous grapnel of iron, that was always used as an anchor on galleys, and is still found serving that purpose in Arab dhows and other Eastern vessels as well as in our own fishing craft, became inevitable; for it is but a translation of the killick into iron, and it is probably with an eye to its origin that such a boat-grapnel is in many places called by that name of "killick" as its own special designation, the difference after all is one of material only. From the same wooden killick to the wooden anchor of the Chinese sailor, too, the change is natural; the upper of its crossed arm-pieces has already served as an anchor-stock when, catching in harder ground, it has served to drive the point of its fellow arm-piece into the softer patch beside it; it now gives place to a light stock of wood, or of rattans lashed together, while the four rods and the stone make way for a solid wooden shank, upon the crown of which the now separated halves of the lower arm-piece are pegged and lashed (Fig. 6). For additional weight, stones are still sometimes lashed upon such rattan anchor-stocks, and the stock itself, by remaining always upon the lower half of the shank, reminds us yet of the lost arm-piece whose place it has taken.

The stages of development from the primeval killick to the iron anchor as, apart from recent freaks, it exists to-day, are less obvious. They have gone on unobserved, and there is no direct proof that the killick was here the original; a single-armed anchor of wood and without a stock, perhaps a mere timber crook, may have been its true ancestor; but by looking at the home-made contrivances of Cornish fishermen we can at least see what these stages *might* have been. We are justified, I think, in assuming that the killick shown in Fig. 3 was in the seventeenth century, if not in the eighteenth, a "familiar object of the sea-shore" to many British as well as other European fishermen. One or other of these fishermen, perhaps more than one, and that independently, hit upon the idea of the inventor of the Chinese wooden anchor—that two points alone were really doing the work, and arrived by a somewhat different route at the principle of the anchor-stock.

To abandon the stone was to him unthinkable, and no less so was the encumbrance of his boat with an enormous anchor of wood on the Chinese scale; he accordingly decided that the stone itself must be the "stock." Then, removing one of his killick's cross-pieces with its two attached rods, and discarding its globular boulder, he set in the remaining half of his killick a long stone, the projecting ends of which quite efficiently served the use of an anchor-stock in directing one of the two arms that remained to a holdfast in the ground. Henceforth he may be assumed to have made no more four-armed killicks, and it is evident that he found converts to his notion. Fig. 7, from an engraving in Ansted's *The Channel Islands*, shows that the mid-Victorian Jerseyman had not got beyond this stage.

In Cornwall at the same period, however, two developments had already taken

place away from this form with its two rods still lashed together above the stone, and at Polperro, where slate called for a rectangular frame to fit its natural cleavage, these two side-rods were fitted into a second cross-piece above, shorter and blunt-ended, while further west, in Mount's Bay, the two rods gave place to a single forked bough, with or without a hole above the fork to serve as anchor-ring, the local name of the latter frame with its arm-piece being "yoke"; and with reason, for it is made precisely like a pig-yoke, the stone taking the place of the pig's neck. Figs. 8 and 9 show both these Cornish "killicks," as they were still called, although we might justly call them "demi-killicks," each of which is drawn from a model made according to instructions given by fishermen of Polperro and Bessy's Cove respectively, such things having been common in both places up to recent years.

At Mousehole, the four-armed killick may possibly have lasted longer, old Cornish names that seem to apply to it rather than to its two-armed descendant were at all events known to a few old men there some forty years ago. These were *ludras* (the frame of a killick), in which may be traced *cluid dres* (cross-hurdle); and *kentepathengy* (pegs belonging to the stone anchor used in punts), which seems to be *kentrow aberth an gé* (pegs at the side of the fence), describing such pegs as we find on the oriental killick (Fig. 1), and not wedges such as were used to secure the rods in the other two Cornish killicks. No such killick has been made at Mousehole within living memory, nor even such "demi-killicks" as those in Figs. 8 and 9; but instead we find there strop-stones fitted with a twist of bar-iron that makes a ring and arms (Fig. 10); a strop-stone that is but a "pressing-stone" with its hook beaten down to form a ring, or more rarely a wood-framed "demi-killick" of quite peculiar construction, in which iron for the first time makes its appearance (Fig. 11), again drawn from a model made after the instructions of a fisherman who had put together many such. Here the side-rods become stout boards; the arm-piece is lost, its purpose being served by a curved iron rod that is driven through holes made in these boards, while at the top the boards are again pierced just below their chamfered meeting-place for the insertion of a ring of iron that, holding them together, serves also as an anchor-ring.

The stone now is none too securely held, but after being given a slight grooving it is bound tightly in place either, as in the model, by nailing strips of hoop-iron about stone and wood, or, failing that, by lashing it there with wire. Here we have the Iron Age making itself felt for the first time by the Stone Age killick, but Fig. 12, from Marazion, which may have had something like the Mousehole killick (Fig. 11) as its immediate precursor, brings us at once to the age of wood and iron.

Pig-iron has now almost supplanted stones for use as ballast, and a single mass of iron suitably bored is often used instead of a strop-stone; here we see it taking the place of stone in a wooden killick. The arms, as in Fig. 11, are formed by a curved bar of iron, but this now, instead of passing through two side-timbers, pierces a single bottle-shaped shank of wood.

This shank is also given a much larger hole, into which is wedged a discarded fire-bar from a steamer's furnace, that takes the place of a stone; and a third hole, as an eye for the strop, completes what is a comparatively neat mooring implement. With the next step we arrive at such a wood-and-iron killick as is still made at Bessy's Cove, Marazion, and Penzance (Fig. 13). Here soft, flat, iron bands take the place of the bent rod of Figs. 11 and 12 in forming the arms, these having the advantage of yielding and straightening under the additional strain of a "Spanish windlass," if they should happen to be caught too securely in a rocky anchorage. Occasionally, as a more shapely piece of scrap-iron turns up, the fire-bar is improved

upon, and one sees such a killick as that in Fig. 14. Here the soft iron band is fastened to the lower portion of the timber shank; sometimes, however, it extends almost to the top of this, as we have seen in Fig. 13, and with the next advance it ousts the wood altogether, becoming both shank and arms itself, so that we have such a killick as those from Marazion, in Figs. 15 and 16. These are very similar to the fire-bar and round-rod killicks used at Penzance (Fig. 17), Bessy's Cove (Fig. 18), and Porthleven (Fig. 19).

At the latter place, however, such killicks, known as "jinny-lins," have been in use for very many years, and their line of evolution from the wood-and-stone killick may have been (perhaps, through a form like Fig. 10), a more direct one. In these "jinny-lin" killicks the round rod is either beaten to a chisel edge at its tips or it may be given what Jal names as the last feature added to the anchor, actual flukes; but in shape the usual iron killick is still more like the Chinese anchor (Fig. 6) than the European. It is towards the latter, however, that the killick is to approximate, if the newest shape (Fig. 20) is to be taken as a guide; for this, sketched a few weeks ago at Penzance, has its bar-iron stock far nearer to the ring than to the crown, and bears a very suggestive resemblance to some early forms of the anchor proper as used in the Mediterranean.

This variant may be imitated, or it may remain unique—the killick may become merged in the anchor, or it may remain distinct; but whatever value as reproducing the evolution of the emblem of hope our Cornish killicks may have, there can be no doubt at all that the old wood-and-stone "crab-claws," of a construction so curious that it is almost impossible to allow for it an independent origin in places so far apart, should give, as a result of a complete survey of its distribution, some valuable indications as to the share borne by seafaring in early culture migrations. Incomplete as this account of the killick necessarily is, it will have served a good purpose should it direct upon it the attention of others whose opportunities for noting its occurrence are wider.

R. MORTON NANCE.

Folklore. Macalister.

The Fire-Walk in Ancient Ireland. *By R. A. S. Macalister.* **63**

Kildare, the site of the nunnery of St. Brigid, was undoubtedly in pre-Christian times the site of a fire and solar sanctuary, and the traditions of the older establishment have in more than one respect coloured those of the later. The following legend may be a case in point. It is given in Ultan's *Vita Brigidæ*, and printed in Colgan's *Trias Thaumaturga*, p. 540.

Brigid had a pupil, Dar-Lugdach by name, who used to sleep with her. The eyes of Dar-Lugdach chanced one day to fall on a certain man, for whom she was smitten with unholy love. Waiting till her superior was asleep, she rose to join him; but she was suddenly oppressed with a great perturbation of mind, between love and fear. In her distress she prayed, and an angel came down with the following counsel, which she followed: To fill two shoes with hot coals, and to walk shod therewith. So the fire extinguished the fire of her ardour, and the pain conquered her pain; and she returned to her couch. On the morrow Brigid commended her, promised her exemption for the future from the fire of desire in this world and the fire of hell in the next; then she blessed her feet, and the burns were healed, leaving no trace.

I suggest that this legend is a tradition of the practice at Pagan Kildare of the rite of the fire-walk. Starting with fragmentary recollections of a woman who walked on fire with unhurt feet, the legend would almost naturally take its present form. If she walked on fire, it must have been for self-discipline; if her feet were unhurt, her wonder-working abbess must have healed them.

The name of the heroine as it stands means "Daughter of Lugaid." But it is highly probable that this is a perversion or a by-form of *Dar-Luga*, "Daughter of Lug," the sun-god.

R. A. S. MACALISTER.

Mexico; Linguistics. **Breton.**

Some Mexican Picture-Names. *By A. C. Breton.* **64**

The old Mexican picture writing of personal and place-names deserves careful study as a method of expressing a sequence of sounds by representations of objects. In some drawings subsequent to the Spanish conquest a rendering of the names in European script was added, making it possible to decipher most of them with the help of Molina's vocabulary. This is the case with the large picture-map of part of the city of Mexico in the sixteenth century,* and also in the long manuscript Memorial or petition from the Indians of Tepetlaoztoc (Valley of Mexico) to the King of Spain.† Both have lists of names, apparently of the principal householders, most delicately drawn.

In MAN, 1917, **101**, the plate was a reproduction of one page of the Memorial, but the brief note by Miss A. Hunter accompanying it, could not include details, such as the name of the chief, Tilpotonqui, which means "dark and sweet-smelling," *til* being properly *tlil* = "dark," and so spelt on another page. Either *t* or *l* is often omitted from that *tl* combination in Mexican speech. The *tlil* is shown as a black rectangular cross with rounded ends. The artist has not tried to give "sweet-smelling" pictorially.

The names in the illustration (numbered for reference) are from four pages of the manuscript. On a following page it is stated that these pages contain the names of twenty chiefs of the town (four chiefs on each page) who had held inherited properties, each chief having—

"78 houses of tenants, with three or four householders (*vecinos*) in each house, who paid tribute to them according to their capacity, giving skirts, shirts, mantles and sashes, fowls, firewood, and personal service, and tilled the crops for these chiefs, so that each had his known income apart from what was given to the lord of all. The said twenty chiefs never contributed nor assisted with tribute the said head lord, because they were persons whom the said lord and cacique held in esteem. When they died they left sons and grandsons who succeeded, and who continued successively in the estates of their fathers and grandfathers. Although the Marquis (Cortes) took from them the vassals they held in other towns apart from Tepetlaoztoc, there remained to them in the said town where they were native a number of vassals and lands with which to maintain themselves, but the greater part of these has been taken from them by reason of the excessive contributions exacted by their encomendero, so that the descendants of these chiefs have come to as much poverty and want as any one of the vassals of the town, for they also have to pay tribute to the encomendero like the vassals."

The twenty chiefs‡ therefore controlled 11,000 families, and this shows how thickly populated Mexico was at that time, before the advent of smallpox and other epidemics, in addition to Spanish cruelties, carried off vast numbers. It would appear that the tenants lived in clusters of houses, as each chief has only a limited number assigned to him.

The illustration contains twenty-one of these place-names and three names of the chiefs, drawn from Miss A. Hunter's tracings from her copies of the original. Figs. 1, 2, 3, are from Pl. 211; Figs. 4, 5, 6, reverse Pl. 211; Figs. 7–18, reverse Pl. 212; Figs. 19–24 from Pl. 213. The lines indicating the thick hair of the

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* Reproduced from a copy of the original, in Dr. A. P. Maudslay's translation of Bernal Diaz, Vol. 4. This has more than 800 names.

† In a volume with other manuscripts, now in the British Museum.

‡ Dr. A. P. Maudslay commented on these twenty chiefs in his Presidential Address to the Royal Anthropological Institute, January 1913. The Memorial has received the name of Codice Kingsborough, after former owner.

householders were omitted in the tracings. The object held by each small householder should be a paddle. These were only roughly sketched in the tracings from which the names were drawn.

MEXICAN PICTURE-NAMES FROM CODICE KINGSBOROUGH.

1. ATOTOLCO: *A* = water, which is a stream with a shell and a drop alternately on the ripples; *totol* = two bird heads, which end the stream; *co* (*comitl*) = an earthern pot.
2. TLATEPA[N]: *Tla* (*tlan*) = teeth; *te* (*tentli*) = lips; *pan* (*panitli*) = banner; *pan* also means above; like *tlan*, it is a common ending of a place-name.
3. ATEOYATLAN: *A* = water; *teoyate* = fan-palm; *tlan* = teeth, also below, implying position.
4. HUICILVAGA: *Huitzil* = humming-bird; *vaca* or *uaca*, from *cuachia* = to sprinkle water.
5. OZTONACAZCO: *Oztoc* = cave, represented by a rocky circumference, the cave being a mouth with teeth above and below. Eyes are sometimes added. The Mexican picturing of rock is evidently derived from the rugged lava-flows. *Nacaz* = ear; *co* = pot.

6. TLAAZCAC: *Tla* = teeth; *az* = wings; *cac* (*cactli*) = sandal with elaborate leather fastenings.
7. AZAUAC: *Az* (*azcatl*) = ants, always pictured by an ant-nest. On the Mexican plateau ants clear a flat space about 3 feet or 4 feet in diameter and then spread over it a quantity of minute bits of obsidian and some gravel. They must take much trouble to collect the obsidian where none is otherwise visible on the surface. *Auac* = sprinkling. The picture is an ant-nest surrounded by sprinkled water.
8. ATIZACALCO: *A* = water; *tiza* = to stuff oneself with a white earth. (The eating of earth seems to have been widespread, for the Pocomchi vocabulary mentions it in Guatemala); *cal* (*calli*) = house; *co* = pot.
9. TEMACO: *Te* = rock; *ma* = top of the head; *co* = pot.
10. TENANIXPA[N]: *Tenan*[*tzin*] = Thy mother; *ix* (*ixtelolotli*) = eye; *pa* = banner.
11. TLALLAXOCHTEPEC: *Tlan* = teeth; *Tlalla*[*n*] = underground or burial; *xo* (*xochitl*) = flower, the flower is laid horizontally. *Tepec* = hill, the usual designation of a town.
12. TETOMA: *Te* = rock; *to* (*tototl*) = bird; *ma* (*maitl*) = hand.
13. OZTOTLAQUETZALCA: This is a very elaborate specimen, almost impossible to copy from the delicate drawing. *Oztoc* = cave; *tla* = teeth; *quetzal* = a long feather of that bird; *ca*[*l*] = house.
14. XYAUCHTENCO: This seems to be a different spelling of *ichca* = hollo! Spelling at that period varied considerably, and here are the cries coming from the lips = *ten*; *co* = pot.
15. APATLAPA: *A* = water; *pa* = banner; *tla* = teeth; and *pa* = above.
16. XOCHITLAN: *Xochi*[*tl*] = flower; *tlan* = teeth and below.
17. AZCATLAN: *Azcatl* = ant-nest; *tlan* = teeth.
18. QUANACA: *Qua* = biting; *na* = top of the head; *a* = water.
19. MAZAQUIAUAC: *Maza*[*tl*] = deer; *quiauac* = outside the house. The picture is a deer's head issuing from the top of a house.
20. TEZCAZONCO: *Tezca*[*tl*] = mirror; *tzon*[*calli*] = a head of hair; *co* = pot.
21. TEXALPAN: *Te*[*ntli*] = lips; *xal* = sand; *pan* = banner, above.

The three chiefs are:—

22. ATLAUHTATACUTL: *Atlauh*[*tli*] = a barranca with a river which issues from below the basalt rock, as may be seen between the towns of Tlatlauqui and Zacapoaxtla; *tataca* = to dig, typified by the man using the Indian hoe.
23. IXACOHUATL: *Ix*[*telolotli*] = eye; *a* = water; *cohuatl* = snake.
24. TECOLOTL: This is an owl = *tecolotl*. It might have been figured with *te* = rock, or *te*[*ntli*] = lips, and *colotl* = scorpion.

It will be seen that without the written names it would be difficult to guess the meaning of the rebus, most of the objects having only their first syllables utilised.

In looking through Molina for the purpose of these notes, one comes on many interesting entries, and a few of these, relating to customs and ideas, may be given here, for those unacquainted with the work.* The second edition of the Spanish-Mexican vocabulary by the Rev. Father Alonso de Molina, of the Franciscan Order, was published by him in Mexico in 1571, with the addition of a Mexican-Spanish part. In his preface to the latter, the author says that in the course of compiling the first part (published in 1555), he "had been gradually discovering the inex-"haustible mine of words and forms of speech contained in this most copious and "ingenious Mexican language." He regretted not to have learned it from babyhood, for "its skilfulness, beauty, and dexterity in metaphors and phrases, only those can "know who should exercise themselves in it." During the fifteen years between the two editions, he continued to accumulate information, and added 4,000 words to the Spanish part, whilst leaving out "very many which will always remain unrecorded." In a dedicatory letter he writes of "the language and speech of the "natives, especially of the Nauas *and* Mexicans," but he always uses the term *lengua Mexicana*, with no reference to that of the Nauas. There has been recently some confusion in writing about the Mexican language as if it were equivalent to Naua or Nahua.

* The British Museum has the *original* and also the *facsimile*, published at Leipzig, 1880.

Molina has :

naualli, witch.
naualiztli, necromancy.
naualtia, to hide behind someone.
nauatile, to have authority to exercise some office.
nauatilli, law or constitution.
nauatl, what sounds well—as a bell, or a man of cultivated speech.
nana, to dance, holding hands.
nanaualiztli, the dance.
nauatlato, interpreter of Latin into the vulgar tongue [the missionary friars promptly taught their young men Latin].
nauallo cuiloa, to write in cypher.
naualtia, to send another cautiously and with deceit on an errand.

Naua therefore implies the idea of knowing more than the ordinary person.

Molina says that Mexican was best spoken at Texcoco and in the city of Mexico, also that certain words were used in some provinces and not in others. The people must have married young and have been long-lived, for in the list of relationships the following are given :—

Brother of your great-grandfather - - - -	*achtontli.*
Sister of your great-grandfather - - - -	*piptontli.*
Brother of your great-great-grandfather - - -	*mintontli.*
Great-grandson and great-granddaughter - - -	*yeutontli.*
Great-great-grandson and great-great-granddaughter -	*mintontli.*

The use of the same expression for the descendant and for the elder member is also found in Pocómchi.

" *Yzpalacatl.*—The water in which they washed the knives of chert or obsidian with which they killed men sacrificially before their idols. This was their holy water and was highly venerated."

" *Tzinyehua.*—To tie rich feathers, joining them to form a headdress or an " image made of feathers. Used as a metaphor to signify the foundation or the grounding of a discourse or sermon on some authority of scripture, &c."

The real inwardness of the making and wearing of feather decorations has been obscured by the supposition that they were mere ornaments.

" *Tlanauac niquiza.*—To pass behind honourable persons out of respect."

To swim under water was distinguished from swimming on the surface. Of practical joking we learn that one was " to remove suddenly a chair or bench just " as a person was going to sit down." " To take something belonging to another as " a trick, and to be obliged to keep it, not daring to return it to the owner for " shame of having taken or stolen it secretly." The extremely strong sense of shame is very striking among the poorer Mexicans and Indians. *Sin verguenza* = without shame, is the most forcible condemnation. Honour is correspondingly strong and always to be trusted. A. C. BRETON.

Physical Anthropology. Hansen.

On Posthumous Deformation of Fossil Human Skulls. *By Dr. Søren Hansen.* **65**

The somewhat discouraging fact that the racial elements of prehistoric Europe are, in spite of many years' excavations and measuring, practically unknown, or at all events still debatable, has led me to a critical survey of the sources from which our knowledge of them flows. Without, in this place, entering upon the bulk of this work, I venture to call attention to a few considerations which might throw some light upon the question, although the result at which I have arrived is rather negative.

Before entering upon my topic I must recall the well known thesis set forth by Thurnam: "Long barrows—long skulls, round barrows—round skulls."* This sentence is false and misleading, but until this day it has been regarded as indicating the main line of racial development in England, and has for many years played a prominent part in the discussion on the development throughout Europe, in confirmation of which I need only refer to the well-known work of Ripley.† It will be a hard task to eradicate it, because in those far-off times there really were, as there still are, long-skulled and round-skulled individuals in England as everywhere else in Europe, grouped in smaller or greater communities. Their true relation to the different forms of barrows has not yet been established, but it must be done, and for the fulfilment of this purpose prehistoric archæology must undertake a careful, critical investigation of all such places of interment, and try to ascertain their age before it will be possible to discover whether there really have existed long-skulled and round-skulled peoples or races. The material on which Thurnam based his theory was carefully examined some years ago by Edgar Schuster, and his numerous measurements prove with absolute certainty that the difference between the skulls from long and from round barrows is very small, if there is any difference at all.‡ As the work of Schuster seems to have been overlooked, probably because he himself has not emphasized its importance, I find it advisable to give a short summary of his figures, from which I have computed the following averages:—

	Long Barrows.		Round Barrows.	
	Male.	Female.	Male.	Female.
Length of skulls - -	190·6 mm.	182·6 mm.	188·6 mm.	177·9 mm.
Breadth of skulls - -	142·4 mm.	138·6 mm.	144·8 mm.	136·6 mm.
Cephalic index - -	74·93(16)	76·35(12)	76·70(30)	77·73(33)

It is not difficult to see how Thurnam may have arrived at his erroneous results, but that is a long story to relate. His more prudent collaborator, J. B. Davis, had his own opinion, and stated it clearly enough,§ but he did not uphold it, and Thurnam's fascinating, short and clear sentence was in accordance with the general views of the most prominent antiquarians of the time. Laing and Huxley,‖ Rolleston,¶ and other distinguished men of science supported him, although they went much further in detailed examination of the skulls than Thurnam ever did, but the great reputation this unhappy idea has enjoyed is mostly due to John Lubbock, whose widely spread *Prehistoric Times* disseminated it over the world.

It is not my intention to begin a discussion of the very intricate British and continental racial problem. I want only to point out that no trustworthy result can be attained without taking into account the fact that the cephalic index of fossil human skulls is in itself of very slight importance, because it is in a great degree affected by the posthumous deformation due to the pressure of the earthen mass which has covered the skulls in graves and other places of interment.

Many years ago, even the grand-master of modern craniology, Paul Broca, of Paris, described this posthumous deformation,** and other prominent anthropologists have since called attention to it, but nobody, so far as I have been able to ascertain,

* *On the Two Principal Forms of Ancient British and Gaulish Skulls: Memoirs of the Anthropological Society.* Vols. I and III, London, 1865 and 1867.

† *The Races of Europe.* London, 1900.

‡ *The Long Barrow and Round Barrow Skulls in the Department of Comparative Anatomy,* The Museum, Oxford. *Biometrika,* IV, 1905, p. 861.

§ *Crania Britannica.* London, 1865. Vol. I, p. 232, note.

‖ *Prehistoric Remains of Caithness.* Edinburgh, 1866.

¶ *W. Greenwell: British Barrows,* Oxford, 1877. Supp.

** *Instructions Craniologiques et Craniométriques. Mem. de la Soc. d'Anthrop. de Paris.* Series II, Tome 2, 1875, p. 164.

has sufficiently emphasized the considerable amount of scientific interest attached to it, most authors having spoken of these deformations as accidental irregularities of no great importance.

As a rule it is not possible to see whether a fossil skull has been compressed or not, nor how far the compression has gone. It is, however, a well-known fact that even thick, hard-baked pieces of pottery found with such skulls are not rarely compressed to such an extent that a similar compression of the skulls themselves is at all events highly probable. Fossil skulls are usually found lying on their sides. They must therefore, when compressed, have a lesser breadth and a greater length than they had before death. The cephalic index must, in other terms, be reduced, and it can easily be shown that a considerable reduction may be due to a very slight compression. It is, as is well known, generally agreed that long or dolichocephalic skulls are those in which the greatest breadth is less than four-fifths, and round or brachycephalic skulls those in which it is more than four-fifths, of the greatest length. Suppose, now, we have a skull measuring 180 mm. in length and 153 mm. in breadth, and suppose, also, that this skull, whose cephalic index is 85, has been compressed from side to side only 5 mm., and at the same time elongated equally 5 mm., you will then have a skull measuring 185 mm. in length and 148 mm. in breadth, and giving a cephalic index of 80. Such very slight compression has thus turned a fairly round or brachycephalic skull into a mesaticephalic one.

If we take another skull, still brachycephalic, measuring 184 mm. in length and 152 mm. in breadth, giving a cephalic index of 82·6, and suppose it to be compressed in the same way to a breadth of 147 mm. and elongated to a length of 189 mm., giving a cephalic index of 77·8, then this skull has become a dolichocephalic one.

I leave it to the reader to pursue the argument. No doubt many fossil human skulls have been compressed far more than 5 mm., not to mention such a one as the famous Galley Hill skull, which was not compressed but crushed, and afterwards restored, with a quite phantastic length. I do not wish to exaggerate the importance of posthumous deformation, and the foregoing figures sufficiently prove that this importance is great enough for my purpose. A difference in cephalic index of about five units is considerable, and always, when true, indicates a clear racial difference. The extent of the compression depends, however, on the manner of burial. A corpse buried in loose soil will usually have the skull more compressed than one buried in a protecting chamber or cist, where the skull is perhaps not compressed at all. This means that a different cephalic index may be due solely to a different form of burial and, further, that a cephalic index of a living population greater than that of its ancestors in the same country may be due solely to a posthumous compression of the skulls of the latter.

It is evident that many other measurements than the length and breadth may be more or less altered in this way, but all we can say about this is that any such alteration is so probable that small, so-called racial differences in fossil skulls are always irrelevant, although it is probable that the facial measurements may be somewhat less affected by the posthumous compression than the main dimensions of length, breadth, and height.

I need not repeat that we are generally unable to perceive that a fossil skull has been altered. I only deal with a highly probable possibility which is not to be denied, and which must necessarily make us very careful in all our conclusions regarding racial differences between the hypothetical prehistoric races, especially the cephalic index. We must surrender a great many of our former opinions, and bury many dear theories, but the loss is not insupportable. The development of the racial problem has in later years reduced many prehistoric races to small lots of individuals

without any right to the title of a race, and modern anthropology will survive them. Genetics has told us that the human races are not what they were meant to be, and that the diversities between different populations or ethnic units are not maintained as racial characters unless such units breed true, which they never do, practically. The great variability of such units is mainly due to the hereditary transmission of freely combined, single individual traits from parents or more remote ancestors, according to the Mendelian law. Greater or smaller ethnic units may, when not crossed with other units, for a time maintain a certain uniformity, but such crossing will sooner or later be unavoidable, and lead not to uniform intermediate units, but to intermediate individuals presenting all the traits of the crossed units in free combination.

The great difference between such human main races as the whites and the negroes is possibly due to their originating from different apelike ancestors, but what we really know about these ancestors is next to nothing, and the same must be said about the European so-called palæolithic races. The few broken skulls and other bones left us as the only human remains from a period of probably more than a hundred thousand years ago, and from different geological strata in all parts of Europe, are still much too few for establishing a reliable anthropological system of real value, however interesting it may be to deal with such riddles. All these remains represent together so small a party compared with the millions of individuals who have disappeared without leaving the slightest trace, that it is quite impossible to say anything more about the palæolithic population of Europe than that we do not know what this population looked like.

Somewhat more is known of the neolithic population, but still not enough to permit us to form any conclusion about its origin or its relation to the nearer populations of Asia and Africa. It is possible that it was composed of several distinct races, although we do not know of them, and never shall, unless we carry out our investigations in a more exact manner than hitherto. SOREN HANSEN.

Yoruba: Folklore. Wyndham.

The Cult of Pérégún 'Gbo. *By J. Wyndham.* 66

Peregun 'Gbo (or Peregun Igbo) seems to have been a god who caused the forest to bring forth birds and beasts. He was a son of God, and came to earth with Ebbor (worship) and Edi, a god who causes men to do what they know to be wrong.

It is evident from the incantation below that Peregun 'Gbo was originally approached by people in need of children, but nowadays the same formula is recited by the priest whatever a man may be asking for. The priest tells the man to bring a sheep, kola, palm-oil, a pigeon, a cock, and a hen; also a live goat for the priest.

The priest kills the sheep, pigeon, cock, and hen. The three birds and a part of the sheep are placed in separate broken pots with palm-oil. The man is then told to produce nine pennyworth of kowries, which are also put into the pots. The priest takes the balance of the mutton in addition to the live goat.

The priest then faces the pots, puts pepper (átarè) into his mouth, and recites the incantation:—

1. Igbo lòbi Iror - - - - The forest bore the sloth.
2. Iror lobi ógũbor - - - - The sloth bore the monkey.
3. Ógũbor lobi áhan-námájú - - The monkey bore the leopard.
4. Áhan-námaja lobi érĕlu-ãgáma - The leopard bore the guinea-fowl.
5. Érĕlu-ãgáma lobi éklsá - - The guinea-fowl bore the hawk.

6. Ẽkũsá lobi óju-gbõna - - -	The hawk bore the evil spirit who guards Heaven's gate.
7. Óju-gbõna lobi áñ íkẽrẽ tíkẽrẽ ẽhin ẽku.	The evil spirit bore the generative organs of men and women.
8. Peregún 'Gbo ni ãbõbá Imálẽ -	Untranslated. Imále is Peregún 'Gbo's messenger, and is sent to do what the man asks.
9. Oriyámi la-popo - - -	Good luck is human.
10. Ẽsẽ ámi lápẽ okũte ába - -	The father of a lucky child is lucky.
11. Átorlãdórla Igbãdá lordífa fun Orúnmila nigbatí nwon ñ õjor íku re dõla.	Átorlãdórla Igbãdá approached Ifa on behalf of Orúnmila when they had fixed his death for the morrow. [Átorlãdórla Igbãdá is a good spirit who keeps on postponing an evil deed contemplated by someone.]
12. Orúnmila ni katikun tíkun kátikẽrẽ tíkẽrẽ.	Orúnmila says menstruation will cease, and pregnancy will begin.
13. Orúnmila ni on ko yúnle órun -	Orúnmila says that he (the child) will not go to Heaven (*i.e.*, will be born alive).

When the priest has finished the recitation, the man takes the pots to the shrine of Eshu (the Devil). The first ten sentences are in praise of Peregun 'Gbo, who ordered Átorlãdórla Igbãdá to go to Ifá, and is now asked to send Imále to Orúnmila with the applicant's request. [The incantation is apparently in some form of archaic Yoruba, and the Babaláwo had to explain much of it to the interpreter. Some of the translations are probably very loose.] J. WYNDHAM.

REVIEWS.

New Caledonia: Anthropology. Sarasin. 67

La Nouvelle-Calédonie et les Iles Loyalty, Souvenirs de Voyage d'un Naturaliste. By Fritz Sarasin. Traduit de l'Allemande par Jean Roux. 1917. Paris: Ch. Fleishbacher & Co.

As may be gathered from the title, this interesting volume is a popular rather than a technical account of the author's observations and investigations in the islands visited. It is, however, by no means so popular as to be devoid of interest to the student of anthropology, which subject receives the lion's share of attention. The illustrations are noteworthy as covering a wide field, and although many of the appliances and other objects figured are of forms familiar to all students of primitive technology, it is convenient to have them together in small compass, and there are some types which will be new to many readers. One is perhaps apt to regard specimens from New Caledonia as relics of a dead past, but although conditions in native life are changed indeed from the times when the aborigines lived their own free life, there are incidents in the book which give a human interest to specimens that are familiar to us in sale-room or museum. "Les magnifiques haches de parade " que possédaient les chefs, sont également devenues très rare. . . Ces armes " de cérémonie sont de vraies fleurs de la technique néolithique": and he tells of a chief who came to him by night "et à l'insu de ses administrés," to propose the purchase of his emblem of rank, since his prestige would have suffered amongst his people if they had learnt that he had voluntarily deprived himself of what we label in our museums as "a ceremonial axe, the haft bound with cord made from the " fur of the flying fox." The transaction is evidence of the disintegrating power of civilization, which was still more marked in the case of a native of Maré, who sold

the skeletons of two chiefs, his ancestors, for 20 francs. These chiefs were, moreover, the two first natives in the island to embrace Christianity, and the exhibition of their bones in the museum at Bâle may be regarded as a tardy recognition of their openmindedness—a character clearly transmitted to their descendant.

Various phases of magic and religion receive a good deal of attention, both in the text and the illustrations. An interesting account is given of rain-making ceremonies, the proceedings, as is commonly the case, being strongly "sympathetic." On the island of Maré, where bodies were frequently deposited in caves, the dryness of the conditions often led to the production of mummies, "jaunes et durcs, plus ou moins bien conservées."

By far the greater part of the book is devoted to New Caledonia, the author having spent only a short time in the Loyalty Islands. For the detailed records of the results of the expedition, students are referred to the author's *Nova Caledonia*.

H. S. H.

India: Archæology. Marshall.

Archæological Survey of India, 1913–14. By Sir John Marshall. Calcutta. 1917. **68**

The Annual Report of the *Archæological Survey of India*, 1913–14, is a very important one, as it contains the first full account of the exploration and conservation of the Buddhist monuments of Sānchi, under the direction of Sir John Marshall, carried out since December, 1912. Sir J. Marshall informs us that a special, fully illustrated monograph on this work, in which he will have the advantage of the valuable collaboration of Messrs. E. Smart and A. Foucher, will be issued. Until this work appears, the present volume of the survey will remain the principal source of information regarding Sānchi and its monuments. A very useful guide-book has already been issued by Sir J. Marshall, of which a notice has appeared in MAN (1919, 48).

The Great Stūpa has long been known to archæologists and travellers, and has been the subject of certain unfortunate experiments in amateur excavation or restoration. With the exception of this stūpa little was visible, and the plan on Plate i shows the extent to which the work has been carried out, and the number of valuable sites now laid bare for the first time. The excavations around this stūpa have proved that its date is not so early as has generally been supposed, and that the original stūpa of Aśoka's age is the brick core around which the present building was erected at about the end of the second century B.C., and that the railing was not completed before the early decades of the first century B.C. The four great tōrana gateways were the last part of the design to be erected, and of these the southern and northern are the earlier, then the eastern, and the western last of all. In arriving at these conclusions, the comparison of the sculptures on the gateways has been of great value. Examples of these will be found in Plate vi, where the same incidents as treated in the southern and western gateways are shown.

Of scarcely less interest is the account of the excavation and restoration of Stūpa 3, illustrated in Plates viii and ix. This stūpa, with its single tōrana gateway, is now one of the principal attractions of Sānchi.

Of the other less complete stūpas laid bare (such as Stūpa 2), and of the many temples excavated and restored as far as possible (especially No. 18, shown in Plates xiii, xiv, and xv), any full account here is impossible. The re-erection of the columns in the case of the latter was an absolute necessity if the whole building was to be preserved from collapse.

Attention must also be drawn to temple 40, which is probably the oldest on

the site, an apsidal chaitya hall, now first laid bare (Plates xix and xx), and temple and monastery 45, which is one of the latest buildings (Plate xxii), erected in the tenth or eleventh century A.D.

The work carried out at Sānchi is as important as anything of this kind as yet done in India.

A good description of the excavation of the Avantiswāmi temple at Avantipura, on the banks of the Jehlam in Kashmir, is given by Mr. Daya Ram Sahni. This fine mediæval temple was destroyed by Sikandar, the image-breaker (*But-shikan*), at the end of the fourteenth century. The lower part was fortunately covered by silt from floods, which has preserved much of the carving. The sculptures shown in Plates xxvii and xxviii are of great interest as specimens of the Kashmir work of the tenth or eleventh centuries. The four-headed Vishṇu (Plate xxvii *b* and *c*) requires special notice, as also the group *e* in the same plate, which M. Foucher considers to be a descendant of the Gandhāra groups of Pāñchika and Hāritī.

The fully illustrated paper by Mr. Duroiselle on the stone sculptures in the Ananda Temple at Pagan does not deal with any new discoveries or excavations, but is the first of a proposed series of studies of Burmese Art, a subject on which very little information has as yet been made available. It is sufficient here to draw attention to this important contribution.

Other papers of much interest are those continuing the descriptions of the excavations at Basārh and Bēsnagar. M. LONGWORTH DAMES

Denmark: Archæology. Nordman.

Nordiske Fortidsminder udgivne af Det. Kgl. Nordiske Oldskriftselskab, samt des résumés en Français. Jettestuer i Danmark, Nya Fynd (Nouvelles Fouilles de "Chambres de Géants" en Danemark). II. Bind, 2 Hefte. Af. C. A. Nordman. **69**

This is an admirable account in Swedish, with a summary in French, of some recent excavations undertaken under the auspices of the National Museum of Denmark and under the direction of that museum's officials. The monuments explored are the type of megalithic tomb known variously as *chambres des géants* or *sépultures à galerie*, and are sometimes in this work termed *chambres à long couloir*.

The Scandinavian archæologists recognise in their region three types of megalithic tombs, known usually as *dolmens*, *sépultures à galerie*, and *allées couvertes*, but it has been stated that in Jutland the two later forms are absent, as at the period of their construction the peninsula was invaded from the south by the people who buried in single graves. The explorations described in the work under review show, however, that the *sépultures à galerie* do occur in Jutland, though they are by no means common in the peninsula, and their occurrence is confined to certain areas. It is to be regretted that this memoire does not include a map of Denmark, showing the positions of the monuments in question, for it is by no means easy to identify the sites with an ordinary atlas, while the exact limits of the occurrence of this type of tomb, especially in Jutland, is a matter of considerable interest.

The text describes ten tombs—one in Laaland, three in Zealand, and six in Jutland. In almost every case a plan of the tomb is given, and these show that in this respect there was little variation, as in all but one case, Hvissehöj, in Jutland, they consisted of a single chamber approximately if not actually rectangular, approached by a long passage. The orientation of the passage seems to have varied, though the openings were always more or less to the east. Sections and photographs are given in many cases, though they tell us less than the plans.

A very full account is given of the contents of the tombs, with many illustrations; the implements, mostly of flint, are of the type usually found in megalithic tombs in this region, and in one case, Raevehöj, in Zealand, there was a pin or bodkin of bronze. The appearance of this bronze pin seems to warn us to hesitate before placing these tombs in the neolithic age, even though metal is usually absent.

But it is the illustrations of the pottery, admirably executed, which constitute the chief value of the volume; forty-seven pots or fragments are shown, and these give us a better idea of the wares associated with megalithic chambers than we could obtain from any previous work. The pottery is not all of one style, and the author distinguishes two types, one a megalithic ware pure and simple, the other affected by some foreign influence, probably that of the users of the single graves.

In this connection it is interesting to remember that Dr. T. H. Bryce, when reporting on his explorations in megalithic tombs in the Isle of Arran (*Proc. Soc. Antiq. Scot.*, 3rd Ser., xii, 74–181), pointed out that some of the pots discovered there bore resemblances to others found with similar associations elsewhere. He gave illustrations from France, mostly from the dolmens of Brittany, from the Pyrenees, from El Argar, and other early sites in Spain, and from the megalithic monuments in Denmark and Sweden. Most of his parallels were very striking, and the Scandinavian examples alone were unconvincing. If, however, he had then had the advantage of consulting this volume, he would have found a large number of examples closely analogous to those which he found in Arran.

The most distinctive type has a curved base, the section of which is a considerable arc of a circle, sometimes almost a semi-circle; this is surmounted by a cylinder, or else by part of a cone, with concave sides, while it is sometimes terminated by a bead rim or an out-spreading lip. Besides the sites mentioned by Dr. Bryce, this form has also been found in the Canary Islands, in the first Sicilian period at Syracuse, and among the dolmens near Taranto.

A number of skeletons were found, but no description of these occurs in the present report; we are promised a fuller account of these and other tombs in an article which is being prepared for the Aarbøger for nordisk Oldkyndighed. It is perhaps permissible to hope that this article will contain illustrations, descriptions, and full measurements of the skulls, and the dimensions of the long bones, besides a map showing the distribution of the different types of megalithic tombs in Denmark, and an analysis of the metal implements found in them.

HAROLD PEAKE.

ANTHROPOLOGICAL NOTE.

Accessions to the Library of the Royal Anthropological Institute. 70

(Donor indicated in parentheses.)

A Comparative Study of the Bantu and Semi-Bantu Languages. By Sir Harry H. Johnston, G.C.M.G., K.C.B., D.Sc. 10 × 8. 850 pp. Sketch map. Clarendon Press, Oxford. (The Author.)

The Folk-Tales of the Kiwai Papuans. By Gunnar Landtman, Ph.D. 11½ × 9. 571 pp. Illustrated. Societas Scientarum Fennica, Helsingfors. (The Author.)

Eyre and Spottiswoode, Ltd., His Majesty's Printers, East Harding Street, London, E.C. 4.

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MEN OF GOZO.

ORIGINAL ARTICLES.

With Plate I—J.

Ethnography. Fleure: Winstanley: Singer: De Guérin.

Correspondence on "Anthropology and our Older Histories." 71

By H. J. Fleure and L. Winstanley.

In a paper published in Vov. XLVIII of the *Journal of the Royal Anthropological Institute* (1918), the remarkable resemblances between the distributions of types of megaliths, to a certain extent of types of ancient skulls, of ancient mines, and of some specified types of finds was worked out, and it was shown that these distributions were curiously similar to that of a certain physical type of man, a point already argued in a previous paper (Vol. XLVI). It was also argued that there was too much resemblance between those distributions and the places mentioned in the early part of British and Irish legendary histories to allow the latter to be dismissed as pure invention. The suggestion was offered that Anthropology, Archæology, and Legendary History in their different ways preserve for us traces of movements of men in the early Bronze Age. The paper has called forth some letters which are of scientific interest, and an account of these is given here by their authors' kind permission.

Dr. C. Singer has added valuable evidence for the presence of dark, broad-headed men in the island of Gozo. In the previous paper (Vol. XLVIII, *Journ. Roy. Anthr. Inst.*) they were mentioned, with references, for Gerba Island, and places in Tripoli, Tunisia, and Algeria (not always near the coast). Dr. Singer has found that they make up the greater part of the population of Gozo. They are, he says, a remarkably uniform and pure group of medium height, broad-chested, dark, and with cephalic indices of over 82. He sends photographs of twelve individuals and wishes to associate his friend Professor Zammit with himself in these observations. Though megaliths of late date abound in the island, the thirteen skulls from the Hypogeum were all decidedly dolichocephalic, and quite different from the modern type just mentioned. The evidence is, he adds, imperfect that these dolichocephals were the builders of the Maltese monuments, and in any event the place where the skulls were found was a secondary burial. It would naturally be unwarrantable to claim that all megaliths were the work of one particular stock, and one notes also that the skulls from British long barrows are for the most part very dolichocephalic.

With reference to the connection between Spain and the earlier inhabitants of the British Isles, Dr. Singer notes that in the Book of Cerne (early ninth century, Mercia), there are, in addition to Irish elements, parts traceable to both Mozarabic and Roman influences. The Mozarabic elements could not have come with the Roman influences, and so must be of Celtic origin.

In a further letter Dr. Singer says that the editor of Tacitus' Agricola, in the Loeb Library, points to the avoidance by the Spanish traders of the storms of the Bay of Biscay. To do this they launched themselves well to the west in their trading voyages; hence the first land they made was Ireland. To this cause is perhaps due the displacement of our islands in the maps of the old geographers, and Tacitus, if he misconceived geography, was right enough about trade routes.

To this Dr. Singer adds that in the maps of Ptolemy the nearest point to Cape Finisterre (Gallicia) by sea trip was Cornwall or Ireland, not any part of Gaul. He says Avienus, in the fifth century, regards Hybernia and Albion, not Gallia, as the natural goal of sailors from Gades and other parts of Iberia, and he thinks it clear that in late Roman times there was active intercourse by way of trade between Spain, Ireland, and England. Archæological evidence simply pushes back the date

of the openings of this trade, and its continued existence increases the probability that the folklore of the route should have survived into legendary history.

Colonel de Guérin, of Le Mont Durant, Guernsey, sends invaluable notes on the megaliths of that island. He says:—

"I have lately been inclined to think that our megaliths in Guernsey may be much more recent than they were supposed to be. This view has been impressed on me by the discovery I made this autumn of traces of a rudely sculptured human figure on the second capstone, the broken capstone, of the great chamber of the dolmen of Déhus (Fig. 1). The figure was sculptured before it was placed in position, as we judge from the fact that part of the design is covered by the stone pillar in the centre of the chamber which helps to support this capstone. The relationship of this figure to similar anthropomorphic sculptures in Guernsey and France is obvious, and as these latter, according to Déchelette and others, date at earliest from late in the Neolithic, at the verge of the mesolithic period, the dolmen of Déhus must be of this age or younger. A copper knife-dagger (Fig. 2) was found in the great chamber of this dolmen by Mr. Lukis (1847), unfortunately not in its original deposit, but in some rubbish that had been moved by the excavators. It is, however, exactly similar to one found in the Dolmen de Cabut, commune d'Anglade, Gironde, and to some found in round barrows in Wiltshire (*see* Abercromby, *Bronze Age Pottery*). We have also in the Lukis Museum two small bronze rings (Fig. 3) labelled 'Déhus,' which were evidently found in the dolmen, though Mr. Lukis does not say anything about them in the account of his excavations. These, I think, all show that the dolmen was, at least, in use in the first ages of metal.

FIG. 1.—ROUGH SKETCH OF SCULPTURES ON SECOND CAPSTONE OF DOLMEN OF DÉHUS.

"Of the same period, First Bronze Age, we have a small copper celt (hâche plate) found at La Hougue du Pommier, and another recently presented to the museum by the heirs of the Rev. J. Cachemaille, so long vicar of Sark. It is of larger size than the above, resembling Type 1, Fig. 80, p. 243, Déchelette, *Manuelle*, Part I, but with a rather broader cutting edge, and was found

FIG. 2.—COPPER KNIFE-DAGGER FROM DOLMEN OF DÉHUS, GUERNSEY.

in Little Sark in 1861. As you know, these 'haches plattes' are chiefly found in France along the western coast from Spain to Normandy, and Déchelette quotes them as evidence of trade between Spain and the North at the dawn of the Bronze Age. In my opinion another important local evidence of this intercourse is our Statue Menhir at the Câtel (Fig. 4), which, in spite of Déchelette's opinion to the contrary, is quite as rude in type as any of those in South-Eastern France that I have examined. I confidently place it as belonging to the First Bronze Age.

FIG. 3.—BRONZE RINGS, DOLMEN OF DÉHUS, GUERNSEY —BRONZE AXE, ST. SAVIOUR'S, GUERNSEY—BRONZE FRAGMENT, SARK.

"That of St. Martin's (Guernsey) is of course very much more recent, and shows that the cult these statues symbolised lingered on here, as it did in Liguria, long after it had disappeared in France and elsewhere.

"We have also in Guernsey evidence of an even earlier sea-borne trade with Brittany in the numerous celts of jadeite and other non-native rocks found in the island. If there was intercourse by sea across our dangerous channels it is reasonable to suppose a similar intercourse along the coast. This trade we can trace in Guernsey, Jersey, and Alderney by numerous objects down to La Tène III, to which our fairly numerous Iron Age graves in Guernsey belong. The glass beads, for instance, found at La Hougue du Comte are identical with those figured by Déchelette, which, he states, the Gauls imported from Northern Italy. Our corded vases of the same period are exactly similar to those of France and south-eastern England, said to be copies in pottery of Italian bronze originals. These all bear out your statements of early trade intercourse.

FIG. 4.—STATUE MENHIR, CÂTEL, GUERNSEY.

"I have an idea that we have evidence of trade from England to the Cotentin and our Islands in the short socketed celts or axes of the Fourth Bronze Age with a broad curved cutting edge found both in Alderney and Jersey, and possibly also in Sark. We have, however, only the cutting edge of one about ½ inch deep from the latter island to judge by. These all differ from the straight Armorican type which is also found in Jersey and Alderney.

"I made a study of our Bronze and Early Iron Age remains last year, and came to the conclusion that we had evidence to prove man's existence in Guernsey from the neolithic period down to our own times without any break. True, our objects of bronze are not as numerous as those of Alderney and Jersey, but they are individual finds of varied types and dates, whereas in Jersey the individual finds are fewer than ours, the greater number of objects coming from three or four 'hoards,' and as far as I could discover only the two last stages of the Bronze Age are represented, and the earlier ages are absent. In the museum of the Société Jersiaise there is a fine bronze dagger (poignard à antennes) of Hallstatt I type, but curiously the later Iron Ages are hardly represented, except by a few small objects, Gaulish coins and fragments of pottery. Of course the chief treasure is their famous gold torque, either of the Fourth Bronze Age or Hallstatt I. The Hallstatt period is hardly represented in Guernsey, unless we can identify the Roche-qui-sonne bracelets and jug-shaped vase as belonging to the last stage of it."

I wish to thank the gentlemen who have sent these valuable letters.

H. J. FLEURE.

DESCRIPTION OF PLATE I—J.

Men of Gozo.

(Photos by Prof. Zammit and Dr. C. Singer, kindly lent.)

1. Age 80.	Cephalic index 85·4 ;	facial index 45·7.		
2. Age 36.	Do.	85·7 ;	do.	48·0.
3. Age 35.	Do.	86·3 ;	do.	49·7.
4. Age 18.	Do.	81·4 ;	do.	42·8.
5. Age 24.	Do.	81·6 ;	do.	42·9.
6. Age 18.	Do.	82·6 ;	do.	49·2.
7. Age 25.	Do.	84·7 ;	do.	45·8.
8. Age 45.	Do.	85·7 ;	do.	43·6.

British New Guinea: Papua. Chinnery.

The Belief in Soul and Soul-substance. *By E. W. P. Chinnery.* **72**

In certain parts of Papua I have observed the existence of a belief which, in essential things, agrees with the concept of soul and soul-substance of the Indonesians, described by A. C. Kruijt (*Encyclopædia of Religion and Ethics*, Vol. VII, 1914).

Full notes on the subject are not at present available, but the distribution may be sketched from data in hand, and later the evidence can be set out in detail, together with a description of the behaviour of spiritual beings and their influence on native life.

The natives of the Northern Division speak of a "thing within" that leaves the body at death and becomes a ghost. A quality, described as the "strength" of the "thing within," permeates the body, and its influence becomes attached to everything with which the body is in any way associated. Water appears to remove the effects of association, for people, when disposing of waste matter, indemnify themselves against sorcery by throwing into a pool or stream of water the object they no longer require.

Ghosts attain status according to the influence exerted by the soul during life. Men, therefore, increase their "strength" in every possible way. Charms and inhalations are employed to acquire the good qualities of animals, inanimate objects, and plants that, like man, possess "strength" and souls. I am also informed that when eating human flesh a man chooses some portion of a victim to reinforce a weakness in that part of his own body (Northern Division and Moreri, Kikori District). The people of the Chirima Valley (Mount Albert Edward) and Kunimaipa

Valley (Mount Chapman) place the bodies of their dead on platforms, and I was told that while the corpse is decaying, men and women stand under the platform and absorb the virtues of the dead man, by anointing their bodies with his fat.

A similar practice, I am informed, existed at one time on the Kumusi River (Northern Division), but there the people made incisions in the corpse to aid the discharge of fluids, and afterwards dried it over smoking fires.

The belief appears to prevail among the inhabitants of the mountains and districts named in above sketch.

I think it will be found, on investigation, that the belief occurs in many parts of Papua, but on the sketch attached, I have merely located those districts in which I personally observed its existence. E. W. PEARSON CHINNERY.

Language, Oratory and Music. Rose.

Comparative "Idiomatology." *By Lieut.-Colonel H. A. Rose.* 73

Mr. Alan Gardiner's *Some Thoughts on Language* emboldens one to ask whether there is not room for a science of Idiomatology* as a sister to Semantics. "Comparative rhetoric" seems to focus too much attention on the objective factors in idiom, which are no doubt very important and hitherto much neglected. "Comparative idiomatology" would embrace both the subjective and the objective factors in the evolution of grammar and syntax. The objects of speech being to express thought to others, to impart information, to persuade, placate, flatter and charm, or to dictate, direct and dominate, to bend or force others to our will, the study of languages may throw much light on the mentality and psychology of races. What could be more imperialist in expression than Cæsar's "Veni, vidi, vici"? All the brusque, almost brutal, directness of the conquering race's speech is concentrated in those six syllables. Yet, one must point out, they convey no more in substance than a lengthy phrase in which the essential facts would be politely suggested. We may take it that in early speech the simple facts were asserted in this Roman

* "The science of idioms"; the *New Oxford Dictionary* gives "idiomatology" as a nonce word meaning "a collection of idioms" (1490), but it denotes a science rather than a collection.

way, with no intent to give offence, and that courtier-like elaboration is a development of civilisation. But this does not throw much light on the history of language. Bearing in mind the undoubted importance of the speaker's relation to his audience, we may begin with a problem in phonetics.

In most modern languages—especially in the Indo-Aryan—accent has displaced quantity. Probably, one may say, ancient Greek and Latin poetry was chanted in a kind of recitative, just as sacred prose and verse are recited in the East to this day. In such recitation there is little scope for emphasis. The compass is small, just as it is in Oriental music, although within that compass occur quarter-tones all but inaudible to a Western ear. May we not take it, then, that Roman speech, for an example, was uttered in a level monotonous staccato, without accent or stress, and that emphasis could only be expressed in it by altering the position of the words in a sentence—as in the trite *optimum condimentum fames* permutations? As will be seen later, this device survives, in certain Romance languages at any rate, to express metaphor. But a new device has become much more important phonetically. As the race advanced—may one say that as its capacity for enjoyment and suffering increased?—so did its vivacity. The compass of the voice was enlarged, and this enabled emphasis to be expressed by tones, so that it was no longer necessary to alter the position of the emphasised word in a sentence.* It sufficed to italicise it—as it were—in speaking. Simultaneously each word developed an accent of its own—enclitics excepted—and Greek evolved a system of accents which completely overwhelmed quantity,† while Latin replaced quantity by accent, and eventually Italian acquired a musical intonation, so that the monotone Latin was turned into the musically most developed of modern tongues. To take a line of Ovid at random:—

"Et pugnáre diū nec mē submittere cúlpæ,"

the vowels are all short with four exceptions (including a diphthong), and it is only by pronouncing every consonant with perfect distinctness—as an Indian reader of a scripture would do—that the line can be heard to scan. Any emphasis or stress throws it at once out of scansion. Emphasis can only have been indicated by position in prose, and in poetry position had to be sacrificed to metre. Hence in Latin prose the position of the words is of great importance, while in poetry it is relatively meaningless. *Ruit cælum* would imply "the sky FALLS"; *cælum ruit*, "it's the SKY that's falling."

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* This theory appears to be confirmed by what we know of Greek music. "We have only to "observe the compass of the Greek scale to see that in the most esteemed modes it is much "more the compass of speaking than of singing voices. . . . It is highly probable that "all modern singing would strike a classical Greek ear as an outcry." And "the only clue we "have to the mental process by which in a preharmonic age different characteristics can be "ascribed to scales identical in all but pitch, is to be found in the limited compass of Greek "musical sounds, corresponding as it does to the evident sensitiveness of the Greek ear to differences "in vocal effort."—(E.B., 11th ed., XIX, p. 78.) Again, "the whole extent of this scale being only "from A in the lower part of the bass stave to A in the treble, indicates that the Greeks preferred "only to hear the middle portion of the voice, and disliked both the high and low extremes, which "could only be produced with effort; and it proves also that their music could not have been of "a passionate or excitable cast, because the use of notes which imply any degree of agitation are "excluded."—*The Art of Music* (*International Scientific Series*: H. H. Parry, 1897, p. 24). It is also significant that the earliest Greek tetrachords—that of Olympos and the Doric—ran downwards in a true cadence—a characteristic of early and Oriental music.

† How M. G. 'Εστία—Hstia—derives from *ἰστία* = vesta is a most difficult problem. Greek accents were, no doubt, marks of pitch, not of stress; Aristoxenus, Meibom's Ed., p. 18, l. 14—quoted by Grove, *Dictionary of Music*, II (1904), p. 231. But this does not explain why the pitch was thrown on the short ι instead of on the ε.

May we not say, then, speaking very generally, that primitive speech was devoid of appeals to the listener's æsthetic sense? It could only invite his attention to the speaker's principal "point" by the device of juggling with the position of words. Music next enabled stress to be laid *on* words (and probably developed accent *in* words), thus adding a persuasive charm to speech.

The interesting parallel of Chinese prosody must also be considered. According to Arthur Waley, Chinese poets used consciously before the sixth century rhyme and length of line, and a third element, inherent in the language, must always have been a factor in its euphony, and that was tone. But until that century tone was not an important element in Chinese prosody, and, it would seem, the early poets were as insensible to tone effects as the Greeks were to rhymed endings. "The "tone consciousness of Chinese poetry was no doubt of gradual growth; the process "might be compared to the change which took place in Latin poetry when it "became quantitative instead of accentual. But the analogy is not complete. Rome "imported a foreign prosody, whereas the changes in Chinese poetry were apparently "due to the evolution of the language itself"—an evolution possibly due to some extent to foreign contact.* But did Latin poetry start by being accentual and become quantitative? Sellar speaks of the "extreme irregularity" of the Saturnian metre,† and no doubt the quantity of syllables, like the inflexions of words, were unsettled down to the time of Ennius,‡ yet the predominant factor in Latin verse, from the earliest known to us, was quantity, not accent. Yet such was the irregularity of the metre that an old grammarian, Atilius Fortunatianus, is cited as saying he could not adduce from the whole poem of Naevius a single line as a normal specimen of pure Saturnian verse.§

But languages offer abundant data to the student of racial psychology and mentality. We English are a downright people, and so we say: "Yes, please," and "No, thank you"; whereas the German says simply, "*Bitte*" and "*Danke*."‖ Yet what could be more evasive than the description: "She's no better than she should be"? It would be unfair to say it is a symptom of English *prudery* or of hypocrisy because we are equally euphemistic about quite trivial things, softening a refusal by "I don't think I can," or "I'm afraid I can't." But the most striking illustrations come from the East.

The Urdu language is derived from several sources. Grammatically it is a descendant of Sanskrit, but, like most modern Aryan vernaculars, it has become analytical. The main characteristics of this analysis appear to throw much light on the psychology of the peoples who use it to express their thought, and probably preserve features as old as the indigenous races which absorbed the Sanskrit-using Aryan invaders. A few sentences which illustrate this may be analysed:—

I.—(i) *Main-ne kahā* (I said); (ii) *main-ne kiyā hai* (I have done); (iii) *main-ne usko mārā thā* (I had struck him). The instinct of the language is to avoid direct personal statement and substitute for it the agentive case with a passive, so that (i) means "by me ['twas] having-been-said," *a me dictum*, not *dixi*; (ii) is analytically "by me having-been-done it is"; and (iii) resolves itself into "by me "to him having been-struck it was."

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* *Journ. Royal Asiatic Society*, 1918, pp. 249–51.

† *Roman Poets of the Republic*, p. 32.

‡ *Ibid*, p. 108.

§ *Ibid*, p. 88.

‖ "*Danke*" declines with thanks—and is a pit-fall to the untravelled in Germany. In Hindustani a more serious difficulty exists. There is no word for "thank you." At least none is in common use. The Persian *shukrguzār* (grateful) is used rarely, and never, I think, outside a set phrase or speech. Must one infer that gratitude in India is unusual, or merely that it is not considered right to express it in every-day speech?

2. This process is pushed still further in the construction *mujhko mārā-gayā*, (lit., to me it had been beaten), which is, as it were, a more passive version of the strict passive *main mārā-gayā* (I was beaten), but not quite as submissive as the almost humorously pathetic *main-ne mār khāyā* (I enjoyed a thrashing), almost equivalent to "I ate stick."*

The almost impersonal touch in these constructions is paralleled in such phrases as the Latin *actum est de me* (it's done for with me), and in the Greek οὐ μοι πίνεται οἶνος, which does not mean merely "I drink no wine," but "I get no wine to drink."

These constructions bring out the fatalistic irresponsibility which is a trait of the Oriental, and this trait is emphasised in the use and development of the causals which have no parallel in any European language. The root-verb is used to indicate what could only be expressed in English by a passive, as in *phansnā* (to be caught, to get caught), *vulg.* (to catch) (in), where the original sense of the English verb seems to be active. In Urdu the active *phansānā* (to entangle) is a secondary derivative from the passive, *phansnā*, and the passive is *never* confused with the active as in such English verbs as "catch," "stick," "set," etc. Causative is, moreover, direct and indirect, and so in Urdu we have a secondary causal as in *pīnā* (to drink), *pilwānā* (to give to drink), and *pilwānā* (to cause to drink). *Main-ne usko pānī pilāyā* means "I [myself] gave him water to drink"; *main-ne usko pānī pilwāyā*, "I got [someone else] to give it him." But the causal is also used with much subtlety to indicate compulsion or duress, and in no other language would such a sentence as *mujh-se dastkhat karwāyā-gayā* (I was compelled to put my signature [on it]) be found. The secondary causal, *karwānā*, is here used to suggest the fact of duress without any explicit mention of the fact itself. It is also characteristic of a rather helpless fatalism that while Urdu has a word *milnā* (to turn up, to be found), it has none that I have ever been able to discover for "to find." A servant will say *nahīn miltā* (it is not found, or to be found), but you cannot say "find it," for *miltānā* means "to join." The nearest you can get to the idea is to say "*milnā chāhiye*" (it must turn up, or be found), or order him to make a search for it. The Indian habit of devolution, whereby an order is passed on by its immediate recipient to another subordinate, is also in accord with the use of the double set of causals. A similar construction is found in Turkish, which has one verb for "to make clothes," a primary causal for getting clothes made by a tailor, and a secondary one for getting someone else to get a tailor to make them.

To return to the West—what could be more delightfully irresponsible than the Irish cook's explanation: "The cake sat down on me"—recorded by Miss Dorothea Conyers?

Transposition used to express Metaphor.

Space forbids any discussion here of the phenomenon of Tmesis in ancient Greek—the reader may consult Monro's *Homeric Grammar*—and the inseparable verbs in German. The principle, apparently, was that if you said "I stand under," you indicated a physical act; whereas "I understand" was a metaphorical expression. But this root-idea was not consistently or universally carried out. Nevertheless, it will be found at work in Homeric Greek, at least, in Latin (*cf. invenire, inhibere*, etc.), German and English, spasmodically. One also sees its influence in the formation of nouns, and in nothing is the degradation of modern English more apparent than in the invention of countless forms like a "let in," a "let off," a "get out," and so on. The English of the constructive period followed the Teutonic model

* Mr. G. F. Abbott calls attention to the occurrence of this idiom in Mod. Greek, ἔφαγα ξύλο (I ate stick).

and prefixed the preposition to the substantive, the compound being generally used in a secondary or metaphorical sense.*

But a beautiful example of the use of transposition to express metaphor occurs in the Romance languages. The normal position of the adjective postpones it to the noun qualified by it. This never seems to have been the rule in German or in Latin. In French the rule is comparatively modern.† By it we have such marked shades of meaning as :—

Un homme triste (a sad man), *triste homme* (a wretch).

Un homme habile (a clever man), *habile homme* (one who is too clever).

and we even find such sentences as *je n'étais pas ce qu'on appelle précisément un jeune homme, mais j'étais un homme jeune.*‡

So, too, we find in Spanish :—

Un buen hombre = a good fellow ; *hombre bueno* = a worthy (? kind) man.

Una cierta cosa = a certain thing ; *cosa cierta* = a sure (true) thing.

Un gran palacio = a fine palace ; *una casa grande* = a large house.

Un nuevo libro = a fresh book ; *libro nuevo* = a new book.

Un pobre animal = a poor animal ; *hombre pobre* = a pauper.§

But this is not the most interesting point, which is "How did the rule arise "in at least three countries?" It was not inherited with Latin or from the German tongues. Apparently by a synchronous impulse all three languages adopted it about the same time, possibly as the device was preserved in their folk-memories.‖

The same rule obtains in Italian.

H. A. ROSE.

Great Britain: Witchcraft. **Murray.**

The Devil's Officers and the Witches' Covens. *By M. A. Murray.* **74**

The organisation of the witches appears to have been traditional, and to follow the same lines in all parts of Great Britain. Each district had its own organisation, which was entirely independent of the neighbouring districts. The Chief or supreme Head was the divine man, the incarnate God, known to the Christian recorders as "the Devil." Below him in rank were the officers, one to each coven ; the covens were companies of twelve witches of both sexes, chosen out of the mass of the congregation for special purposes.

The officer might be either a man or a woman, whose duties were to arrange for meetings, to send out notices, to keep the record of all work done by the covens, to enter the attendances of the members, to transact the business of the community, and to present new members. This person evidently noted also any likely convert, and either entered into negotiations himself or reported to the Chief, who then took action as opportunity served. At the local weekly meetings the officer took command in the absence of the Chief. At the Grand Assemblies or Sabbaths the officers were heads of their own covens, and though called "devils,"

* But not by any means invariably so. Thus we have "income," "outcome," "outgoings," "uptake," but "outlet" and "inlet" are both physical. The development of meanings in "overseer," "overlook," "onlooker," "bystander," and numerous other compounds is obscure and, like much else in English speech, rather capricious.

† Darmesteter, *Hist. French Gr.*, p. 885.

‡ Barbey d'Aurevilly, *Les Diaboliques.*

§ Piers' *Skeleton Spanish Grammar*, p. 11, but *cf.* 13. Observe how the writer confuses his pupils by putting first the abnormal, then the normal allocation. He does not allude to the usage in French or Italian or point out the obvious *aide-mémoire.*

‖ It will be noted that the adjective when prefixed tended to form a compound with the noun, as in French *bonhomme, prud'homme, sage-femme ;* Spanish, *ricohombre ;* and in English, "goodman," "good fellow."

or "spirits," were recognised as being of inferior rank to the Chief. At the Sabbaths there were, however, different ranks of officers; the principal officer, usually a man, acted as secretary and entered the witches' reports in his book; and if he were a priest or ordained minister, he conducted part of the religious service. In the absence of all direct information on the subject, it seems probable that the man who acted as principal officer became the "Devil" on the death of the previous Chief.

The duties of the officer are continually mentioned in the trials of the witches. Estebene de Cambrue, tried in 1567, said: "Elle a veu au Sabbat vn Notaire " qu'elle nomme, lequel est accoustumé de lener les defaute de celles qui ont " manqué de se trouuer au Sabbat."* Among the North Berwick witches, tried in 1590, there were several officers, of whom John Fian was the chief: "Robert " Grierson being named, they all ran hirdie-girdie and were angry; for it was pro- " mised he should be called 'Robert the Controller, *alias* Rob the Rowar,' for " expriming of his name. John Fian was ever nearest to the Devil, at his left " elbow; Gray Meal keeped the door. Geilis Duncan confessed, he [Fian] was " their Register, and that there was not one man suffered to come to the Devil's " readings but only he. [Fian himself stated] that at the general meetings of those " witches, he was always present; that he was clerk to all those that were in " subjection to the Devil's service, bearing the name of witches; that alway he " did take their oaths for their true service to the Devil; and that he wrote for them " such matters as the Devil still pleased to command him."† Elizabeth Southerns, otherwise known as old Mother Demdike, one of the Lancashire witches tried in 1613, "was generall agent for the Deuill in all those partes."‡ That "eminent Warlock," Robert Grieve of Lauder, tried in 1649, "was brought to a confession of " his being the *Devils Officer* in that countrey for warning all Satans vassals to " come to the meetings, where, and whensoever the Devil required. The Devil " gave him that charge, to be his Officer to warn all to meetings: (as was said " before) in which charge he continued for the space of eighteen years or more."§

The evidence concerning Isobel Shyrrie, of Forfar, tried in 1661, is too long to quote, but it is clear that she acted as the officer.‖ The trials of the Auldearne witches in 1662 are full of detail; Isobel Gowdie says plainly, "John Young in " Mebestown, is Officer to our Coven"; and "John Young in Mebestown, our Officer, " did drive the plough." Janet Breadheid, of the same coven as Isobel Gowdie, shows in her evidence that the officer might be changed: "John Taylor, my husband, " was then Officer; but John Young in Mebestown, is now Officer to my Coven. " When I first came there, the Devil called them all by their names on the book; " and my husband then called them at the door. When we had Great Meetings, " Walter Lady in Penick, my husband, and Alexander Elder, next to the Devil, " were Rulers; and when there would be fewer, I myself, the deceased Jean " Sutherland, Bessie Hay, Bessie Wilson, and Janet Burnet would rule them."¶ In the Somerset witch trials of 1664 Anne Bishop was clearly the officer.** John Stewart, of Paisley, tried in 1678, gave evidence that Bessie Weir "was Officer to " their several meetings. Bessie Weir did intimate to him, that there was a meeting " to be at his house the next day: And that the Devil under the shape of a black " man, Margaret Jackson, Margory Craige, and the said Bessie Weir, were to be

* De Lancre: *Tableau de l'Inconstance*, p. 138.
† Pitcairn: *Criminal Trials*, I, pp. 239, 240, 219-20. Spelling modernised.
‡ Potts: *Wonderfull Discoverie*, B. I.
§ Sinclair: *Satan's Invisible World*, pp. 46, 47.
‖ Kinloch and Baxter: *Reliquiæ Antiquæ Scoticæ*, pp. 124, 129.
¶ Pitcairn III, pp. 605, 608, 617. Spelling modernised.
** Glanvil: *Saducismus Triumphatus*, pt. II, pp. 140, 147, 148.

" present. And that Bessie Weir required the Declarant to be there, which he " promised."*

There was one duty which was delegated to a particular individual, who seems to have been often the principal officer; this was the management, generally the leading, of the dancers. As pace seems to have been an essential in the dance, the leader was necessarily active and young. At North Berwick "John Fian, muffled, led the ring."† At Aberdeen, in 1596, "thou the said Thomas Leyis was foremost and led " the ring, and dang the said Kathrine Mitchell, because she spoiled your dance, " and run not so fast about as the rest. . . . In the which dance, thou Helen " Fraser was the ring leader, next Thomas Leyis."‡ The Rev. Gideon Penman, of Crighton, spoken of by the Devil as "Mr. Gideon, my chaplain," was "ordinarily in " the rear in all their dances and beat up those that were slow."§ This Mr. Gideon seems to be the same person as the "warlock who formerly had been admitted to " the ministrie in the presbyterian times, and now he turnes a preacher under the " devill. This villan was assisting to Satan in this action [giving the sacrament] " and in preaching."‖

The covens were companies or squads of witches, both men and women, not necessarily all from one village, though belonging to one district. Each coven was ruled by an officer who was under the command of the Chief or Devil. The members of the coven were apparently bound to attend the weekly meeting; and it was they who were instructed in and who practised magical arts, and who performed all the rites and ceremonies of the cult. The other members of the religion attended the local meetings occasionally but did not work magic; and went to the Sabbaths as a matter of course. This view of the organisation is borne out by the common belief in modern France: "Il est de croyance générale qu'il *faut un nombre fixe de sorciers* " *et de sorcières dans chaque canton.* Le nouvel initié reprend les *vieux papiers* " de l'ancien. Les mauvais gens forment une confrérie qui est dirigée par une sorcière. " Celle-ci a la *jarretière* comme marque de sa dignité. Elles la transmettent " successivement par rang d'ancienneté."¶

The "fixed number" among the witches of Great Britain seems to have been thirteen, twelve witches and the officer. The actual numbers can be ascertained only when the full record of a trial is available; for when several witches in one district are brought to trial at the same time they will always be found to be members of a coven, and if the record is complete the other members of the coven will be implicated, or at least mentioned.

One of the earliest trials in Great Britain is that of Bessie Dunlop in 1567. She went with a certain Thom Reid, who was clearly the officer, "to the kill-end, " where he forbade her to speak or fear for anything she heard or saw; and when " they had gone one little piece forward she saw twelve persons—eight women and " four men. The men were clad in gentlemen's clothing, and the women had all " plaids about them and were very seemly like to see; and Thom was with them."** The witches of St. Osyth in Essex, tried in 1582, were thirteen in number.†† At the meeting of the witches at the Kirk of North Berwick in 1590, nine witches stood together in one company, and the rest, "to the number of thirty persons, in

* Glanvil, pt. II, pp. 291, 293.
† Pitcairn, I, pt. iii, p. 289.
‡ *Spalding Club Miscellany*, I, pp. 97, 114.
§ Fountainhall: *Decisions*, I, p. 14.
‖ Law: *Memorials*, p. 145.
¶ Lemoine: *La Tradition*, 1891, VI pp. 108–9.
** Pitcairn, I, pt. II, p. 82. Spelling modernised.
†† *A true and iust Recorde of all the Witches taken at St. Oses.*

an other company"; in other words, there were thirty-nine person, or three covens, present.* In the Aberdeen trials of 1596 and 1597 the names of sixty-four witches occur; of these seven are mentioned as being known to the others but apparently living at a distance, five were acquitted, and one, Helen Pennie, is referred to as having been executed shortly before; thus, counting Helen Pennie, there were fifty-two witches, or four covens.† The great trial of the Lancashire witches in 1613 also gives the names of fifty-two persons, or four covens.‡ At Forfar, in 1661, little Janet Howat said, "There was there present with the devil beside herself, whom "he called the pretty dancer, the said Isobel Shyrrie, Mary Rynd, Helen Alexander, "Isobel Dorward, and others whose names she did not know, to the number of "thirteen of all."§ Isobel Gowdie, of Auldearne, shows that there were several covens in her district: "There is thirteen persons in each Coven . . . the last "time that our Coven met, we, and an other Coven, were dancing at the Hill of "Earlsest, and before that we was beyond the Meikle-burn; and the other Coven "being at the Downie hills, we went beside them. [She and four others made a "charm], we, with the Devil, were only at the making of it, but all the multitude "of all our Covens got notice of it at the next meeting, all my own Coven got "notice of it very shortly."‖ When Janet Brondhold was admitted into the society there were thirty-nine persons, or three covens, present in the Kirk of Nairn.¶ The Somerset witches in 1664 numbered twenty-six, or two covens.** At Newcastle-on-Tyne, in 1673, Anne Armstrong gave evidence that at the meeting at "the Rideing "House in the close near the common," she saw ten men and women whom she knew, "and thre more, whose names she knowes not." At another meeting "at "Rideing Milne beldg-end she see the said Anne Forster, Anne Dryden, and Luce "Thompson, and ten more unknowne to her"; and at a large meeting at Allansford, where a great many witches were present, "every thirteen of them had a divell with "them in sundry shapes."††

M. A. MURRAY.

REVIEWS.

Archæology in Chile.

Uhle.

Publicaciones del Museo de Etnologia y Antropologia de Chile. A5a 1 **75**
Num. 1, 1916.

Los Aborigenes de Arica. By Max Uhle. 1917.

Some interesting pamphlets have been received from Dr. Max Uhle describing recent researches on the north coast of Chile. In 1912 the Government founded a Museum of Ethnology and Anthropology in Santiago, and engaged Dr. Uhle (then in Lima) as director, not only of the museum but of expeditions to collect material. At this he worked hard until 1916, when his contract was cancelled, the Government retaining his valuable collections, including 400 ancient skulls and fifty mummies. In the first of these publications P. Martin Gusinde gives an account of the museum, addressed chiefly to the Chilean people in argument for the need of such an institution, not merely as a section of the Historical Museum, but as a separate entity. He mentions the *Handbook to the Ethnographical Collections: British Museum*, "which will make a man open his eyes and remain amazed at the "educational value of this precious collection," thereby showing himself more

* Pitcairn, I, pt. iii, p. 245. Spelling modernised.
† *Spalding Club Misc.*, I, p. 87, *seq.*
‡ Potts: *Wonderfull Discoverie.*
§ Kinloch and Baxter, p. 114. Spelling modernised.
‖ Pitcairn, III, pp. 605-6, 613. Spelling modernised.
¶ *Id.*, III, pp. 616-7. Spelling modernised.
** Glanvil, pt. ii, p. 198, *seq.*
†† "Depositions from York Castle." *Durham Priests*, II. cc. 300-1, 304.

enlightened than certain British M.P.s. He also emphasises the need of saving what is possible of Araucanian ethnology, rapidly disappearing under modern influences.

There follow two papers on the palæolithic station at Taltal, one by Dr. Uhle, the other by Dr. Aureliano Oyarzun, for some time honorary director of the museum. The latter has illustrations, and it also appeared in the second Pan-American Scientific Congress Proceedings, Section I. Taltal is a small port, and Sr. A. Capdeville has the credit of discovering and excavating a great shell-heap there, with a large number of chipped and also of flaked stone implements of very early types (*see* Fig. 1). A portion of these was presented in 1915 to Dr. Oyarzun, who sorted them, showing that they represent implements of the various palæolithic phases from Chelles onwards, although not of the best specimens. Dr. Uhle went to Taltal in May, 1916, and spent three weeks, partly in verifying Sr. Capdeville's observations, partly in excavating, including making a trench 12 metres long by 2 metres wide in the southern slope of the Morro Colorado, the site of Sr. Capdeville's work. He has sent photographs of specimens and nuclei.

Briefly, he gives the following results. The rocky hill, a peninsula, about a league north of Taltal, rises 90 feet above the sea, with a diameter of 200 metres. The ancient fishing folk lived on the more sheltered part. The actual shell-heap is about 40 metres in diameter, with depth to the rock of 3·10 metres at most. Four layers could be distinguished: (1) The lowest, of grey ashes with some palæolithic implements, had a depth varying from 0·15 metres to 1·0 metres. (2) A yellow layer of fine sand like flour, with many fish-bones and some shells and palæolithic objects of bone. This is on the southern and central part of the site. (3) A brownish layer of fragments of fish-bones, sea-birds, etc., and of shells, with no admixture of earth, about 1·20 metres thick. In this were the implements of Chellean type (chiefly instruments of amygdaloid form, and scrapers), though some were on the rock where layers (1) and (2) were thin. (4) The surface layer, chiefly of earth, with remains of fish and shells, covers the entire site. This last layer contained many arrow points, and there are some in the next layer below. Black silex was used for the implements in the lower layers. It is evident that some of them were re-worked at a later period.

Phot. Max Uhle

FIG. 1.—STONE IMPLEMENT FROM TALTAL, SOUTH CHILE.

No mention is made of any traces of burials. There were no remains of pottery throughout, except a few superficial fragments, nor did Dr. Uhle find any implement that could be called polished, although some pebbles and some longish stones used as mullers had become smooth with wear. Dr. Uhle had previously investigated a site near Constitucion (in the south), where objects of palæolithic character occurred in the lower levels, whilst others, more amorphous, took their place above. As on ancient sites in Australia, there is at Taltal an apparent mixture of early types which in Europe are met separately and under diverse conditions. The arrow-points on top Dr. Uhle proved had come from a great plain west of the Pampas of Taltal, where, at an altitude of 2,000 metres, he found remains of horse-shoe-shaped sheltering walls and thousands of fragments of quartz and pebbles brought there to

be worked. Fish-bones showed that the workers had come from the coast. Finely flaked arrow-points of jasper, chalcedony, chert and quartz are found in profusion along the coast of Chile, also on the Atlantic coast of Patagonia and as far north as the Willamette River in Oregon, showing the extended traffic of the neolithic folk, their love of pretty stones and artistic work.

In *Los Aborigenes de Arica*, Dr. Uhle describes his excavations in cemeteries near that port, some of them comparatively recent with painted vases, squatting mummies, textiles and other things of no advanced culture. On the east side of the Morro of Arica, the burials were of different type and more ancient, the bodies in extended position with small furnishings. From their condition they seem to have been kept some time before being mummified. Sometimes one or both arms had been replaced by artificial ones, or there would be a sham hand. One arm of an adult had been prepared separately and placed with the body. Many feet were lacking or even a whole limb, also vertebræ and ribs. A great variety of methods was used in the preparation; usually the entrails were extracted, the other organs destroyed, the skull opened, and the brains removed and replaced by a lump of reeds. Some bodies were dried naturally, whilst others show signs of fire. After filling the cavities with handfuls of reeds, straw brushes, and human hair, the skin was sewn up correctly. More remarkable was another method. The body was in a reclining position, entirely covered with a layer of yellowish clay about 1 cm. thick, which gave it a petrified appearance, or a resemblance to the reclining figures on Etruscan sarcophagi. It was in a bed of the same clay, made of sand mixed with a reddish liquid and as hard as rock.

These early men had no pottery, metals, agriculture, or textiles, but could make a kind of netting. They were from 132 to 160 cm. in height, and their skulls were usually round, undeformed, heavy, and a centimetre or more in thickness. The mandibles were wide and thick, the dental arches very narrow, not a sign of caries in more than 100 skulls examined, but the teeth (which were large), frequently much worn down. Colouring matter of red and yellow ochres was used on their bodies, and they had aprons of vegetable fibre or skins. Both sexes wore the hair short. The dry climate was favourable to preservation and specimens remain of rattles of two forms, one with a handle, the other made of a bladder with small pebbles inside. There were spear-throwers of the oldest of the three South American varieties, a stick with a leather projection to support a finger. This Dr. Uhle also found in the oldest part of the Pisagua site and at Nieveria, near Lima. There were combs more like a brush, used also in Patagonia. The first toothed combs appeared in the Tiahuanaco culture. In some of the Arica burials there were painted pebbles like those of Mas d'Azil, with lines of red, yellow, and black. Some mummies held stone implements in their right hands. There were a few things evidently brought down from a more cultivated people in the highlands. Skeletons 175 cm. high, had narrow dolichocephalic skulls, with frontal and occipital deformation like that of Proto-Nazca. During the use of these cemeteries bows began to take the place of the spear-thrower; one, a metre long and rectangular in section, is the oldest yet found on this coast. The people lived near springs on the banks of rivers, not far from the sea. Their cemeteries were parallel, inland. They caught sharks with large harpoons, and had boats made of reed mats, with a reed sail similar to those used by the Uros of the Desaguadero.

Dr. Uhle has always been a careful observer and his long experience in excavations makes him a safe guide on his own ground, but when he tries to square other men's theories with his facts, he may stumble. Having been told that it is impossible that Man reached America before the neolithic period, he tries to bring down his primitive folk as late as possible. Idle heads in Lima demanded dates for

his collections there, and he was tempted to sketch out periods for Peru on the principle that 500 years is the average duration of any phase of civilisation. We know far too little yet of ancient Peru for any system of actual dates to be possible. No one can see those immense artificial hills on the plain of Lima, entirely made of small bricks, also the terracing of high rocky mountains to the summits, without recognising the length of time necessary for such developments. A. C. BRETON.

Centra Asia: The Turks. Czaplicka.

76 *The Turks of Central Asia in History and at the Present Day: An Ethnological Inquiry into the Pan-Turanian Problem, and Bibliographical Material relating to the Early Turks and the present Turks of Central Asia.* By M. A. Czaplicka. 22 × 14 mm., pp. 242. 15*s.* net. Oxford: The Clarendon Press. 1918.

In this timely and useful book, Miss Czaplicka, already well known by her works on the ethnology of Siberia, examines from the point of view of anthropology one of the German projects to secure a world-wide dominion, which was wrecked by the successes of our armies in Mesopotamia and Palestine. This was the Pan-Turkic or Pan-Turanian movement, which aimed at bringing directly under the control of the Osmanly Turks, and indirectly under German influence, all those countries in which the various Turkic languages are spoken. Had this scheme succeeded the results would have been partly economical, partly political: First, to develop the resources of Central Asia and to provide raw materials for German factories; secondly, to put pressure on Russia in Central Asia, and on Great Britain by menacing the safety of the Indian frontier through Mesopotamia, Persia, and Afghanistan. The result of Miss Czaplicka's researches is to show that the Western Turks, that is to say, the people speaking Turkish languages, most of them subject to the Ottoman Empire as it was constituted before the war, and numbering some eight or nine millions, must be sharply distinguished from the Eastern Turks, inhabiting Turkestan and Central Asia as far as Mongolia and the Chinese border, a people numbering some ten millions. The former, except for their Osmanly language, should be classified among Europeans by adoption, like Hungarians or Bulgarians; the latter may be considered to be a remnant of the old Turkic race, originally known as Hiung-nu, which had passed through various changes in Central Asia. The ethnology of these latter races is very fully discussed in relation to archæology, and the conclusions adopted by Miss Czaplicka are fully justified by the evidence collected from sources inaccessible to most English anthropologists. The value of this work is enhanced by an elaborate bibliography embracing the Russian material. This will be indispensable to all further students of the ethnology of Central Asia.

W. CROOKE.

India. Kaye.

77 *The Astronomical Observatories of Jai Singh.* By G. R. Kaye. Calcutta: Superintendent Government Printing, 1918. Price, rupees 14–12, or 23*s.*

Jai Singh was born late in the seventeenth century, and died in 1743. He distinguished himself not only as a statesman, and to some extent as a soldier, but "He conceived and carried out a scheme of scientific research that is still a "notable example, and his influence is still a living one. The observatories he "erected are . . . 'monuments that irradiate a dark period of Indian History.'" Fond of astronomical work in his youth, he studied it diligently. "He found the "astronomical tables in use defective, and set himself the task of preparing new "ones. . . . [He] took every means to ensure success. He . . . studied

" Hindu, Muslim, and European methods impartially. He collected astronomical " books and had certain of them translated; he organised a regular staff of workers " and sent some of them to foreign countries to collect information; he invited " certain Europeans . . . to Jaipur; he built a large observatory at Delhi " . . . ; and afterwards he built other observatories at Jaipur, Ujjain, Benares, " and Mathurā." The present book on these observatories, undertaken primarily as a tour report for the Archæological Survey of India, has been made mainly descriptive; dealing elsewhere with Hindu astronomy in general, the author gives here merely a summary of it, and "in so far as it is related to Jai Singh's labours."

At first Jai Singh's instruments were of metal—astrolabes, most of them beautiful examples of Oriental craftsmanship, of which numerous excellent photographs are given—but later, judging that his brass instruments were faulty because of their mobility and their small size, he discarded these and built instruments of masonry, varying in size up to 90 feet in height. By the construction of these great instruments, which figure to-day among the principal "sights" of Delhi, Jaipur, and Benares, he actually hindered the progress he was attempting to further, for size and immobility in an instrument increase the difficulties in altering or improving it. While some of the instruments he built of masonry are common to many observatories, three of them are peculiar to the observatories of Jai Singh, and probably are due, at least in part, to his own ingenuity, which, however, "was " chiefly concerned with the transference of designs, previously executed in instru- " ments of comparatively small size, to huge masonry instruments. No new " invention . . . was attempted." More or less detailed, well illustrated, accounts of these various instruments are given. Following upon the descriptions of the individual instruments are general descriptions of the several observatories, chiefly in their historical and astronomical aspects, together with reports upon and suggestions as to the work at present required for their preservation. At Ujjain, which "is " one of the most ancient astronomical centres in the world," the masonry instruments are all falling into ruin. Tradition making Ujjain the centre of astronomical learning in India, the author recommends, in addition to its repair, that "not only " should it have a modern observatory, but it should be the centre of Hindu " astronomical teaching . . . the position . . . to accord with the [Hindu] " traditional position of zero longitude."

An interesting but very brief account of Indian astronomy and its bases up to the time of Jai Singh is given in Chapter XII ("Historical Perspective"), while in Chapters XIII and XIV the evolution of his instruments and the conclusions to be drawn as between his work and that of his predecessors and contemporaries are briefly dealt with. As to the value of the work accomplished by him, the author says: " His avowed object was the rectification of the calendar, the prediction of eclipses, " and so on—work which entails a great deal of labour, and generally shows no " remarkable achievement . . . his scheme of astronomical work was a notable " one, and his observatories still form monuments of a remarkable personality."

Jai Singh's instruments, both those of metal and those of masonry, were at times used for astrological purposes, and some of them are marked with graduations intended especially for such purposes. One of the Appendices (B) is concerned "with such astrological matters as are exhibited by the instruments." D, another Appendix of other than purely astronomical interest, relates to technical terms and symbols. Appendix F, "Bibliography," includes sections concerned with astrolabes, Hindu astronomy, Muslim astronomy, and astrology. The book has an excellent index, and is provided with a fine series of photogravure illustrations. W. L. H.

EYRE AND SPOTTISWOODE, LTD., His Majesty's Printers, East Harding Street, London, E.C. 4.

FIG. (a) FIG. (b) FIG. (c) FIG. (d)

A CARVED WOODEN OBJECT FROM SANTO DOMINGO

ORIGINAL ARTICLES.

With Plate K.

West Indies. Fewkes.

A Carved Wooden Object from Santo Domingo.* *By J. Walter Fewkes.* **78**

On a recent visit to St. Louis, Missouri, the author observed on exhibit in the collection of the Missouri Historical Society, a carved wooden image† from the island Santo Domingo which seemed to him of more than passing interest. It was accompanied by a manuscript, of which the following is in essentials a copy :—

"An Original Paper by Albert Warren Kelsey on a Zemi or Santo Domingo Idol.

"Presented at the same time [as the object] to the Archæological Department of the Missouri Historical Society Museum, July 17, 1878.

"*A Zemi or Santo Domingo Idol.*

"In the years 1867-68 I passed some months in the West Indies, more particularly the Windward Bahamas and Santo Domingo. At this date the annexation of the last-named had scarcely been contemplated and the interior of the island remained, as, indeed, it remains to this day for that matter, almost a very *terra incognita*. As there are no roads worthy the name on the island, there are no wheeled vehicles; the inhabitants ride upon bulls for the most part, and only in the dry season, by taking advantage of the dried-up beds of the numerous mountain torrents, is communication between one part of the island and the other attempted by land; if necessity compels a merchant or intriguing politician to visit some city distant from his home or place of business, he takes advantage of some little sloop or schooner to slip along the coast, by sea.

"An American mining company, formed for the purpose of utilising the rich deposits of gold and copper in the interior province of La Vega, was compelled to introduce camels in order to transport the ore from the mines to the sea coasts! I mention these facts to account for the length of time for which the idol lay undisturbed

"Shortly before my departure from the island, I was informed of the discovery of this idol, or 'zemi,' as it used to be termed by the natives whom Columbus found upon the island. It was found at the innermost extremity of a large cave (of which there are a number in the island) by an intrepid explorer of free-thinking proclivities whose curiosity had been excited by the superstitious stories current in reference to these caverns, which none of the natives could be induced to penetrate. It bore every evidence of having been undisturbed for untold years. In its immediate vicinity were found fragments of similar images, but made out of stone instead of wood; these others had crumbled away [*sic*] by the action of the air; this particular idol being made out of wood of the lignum-vitæ, indigenous to this island, had withstood the action of the atmosphere better than the friable sandstone out of which the others were formed.

The discoverer asked too large a price for his 'find' for my means, and I reluctantly relinquished the idea of becoming its owner. But it chanced that I had

* Published by permission of the Secretary of the Smithsonian Institution.

† It is with great pleasure that the author takes this opportunity to thank the officials of the Missouri Historical Society for many courtesies, especially for photographs and permission to publish a description of this unique object.

made the acquaintance of a leading German merchant, Mr. Bruns, of Roth, Bruns & Co., at San Felipe de Puerto Plata, who desired to present me with some token of his regard, and hearing of my anxiety to obtain the 'zemi,' he went himself to the discoverer and bargained for it, and presented it to me. The children of the discoverer had removed certain fishes' teeth, which had been inserted in its mouth, and his wife, 'for decency's sake,' had seen fit to excise a rather ponderous genital organ appertaining to it when originally discovered. In other respects it is exactly as when discovered. The theory of certain German savants to whom I submitted it was to the effect that the saucer-shaped cavity where the stomach should be was destined to receive the offering of the devotees, said offerings among the ferocious Caribs often consisting of the still warm and palpitating heart of a human victim,* as among the Aztecs.

"Irving states, however, that the Dominican aborigines were reported by the chroniclers of the first expedition under Columbus to have presented only fruits or flowers before their idols.

"It will be observed that the idol is evidently intended to simulate something approaching a human form, extended upon its back, when seen from above; but when looked at from the side, it was also seemingly intended to represent some reptile of the lizard species, with which these islands abound, the arms being thrown forward and out of joint, as it were. The greatest mystery is how this hard wood could be carved without the aid of metals, as it is generally admitted that it must have been; the sharpest sea shell might perhaps, by months of continued application, have sufficed, but anyone who will try to carve lignum-vitæ will have a realising sense of the perseverance essential to carve such an affair, even with our best modern edged tools.

"That the zemi is a genuine relic of prehistoric ages, antecedent to the discovery of America in 1492, I have no doubt, nor do the present inhabitants of Santo Domingo worship or manufacture idols of any kind. As it was obtained from the original discoverer, there would seem to be no valid reason for not accepting it as the probable object of propitiatory worship or adoration by the natives of San Domingo."

It seems well to supplement this description with illustrations and a few additional notes. The object is carved out of one of the hardest of black tropical woods which still retains, here and there, a smooth surface, although in places worn as if by action of the elements. Its length from top of the head to soles of the feet is 24 inches; breadth across the bowl just above the hips 5¾ inches.†

It will be noticed that, like many other carved wooden objects, it was found in a cave, and attention should be called to the fact that some of the Antilleans are said to have lived in caves or performed their ceremonies in these secluded localities. Specimens of idols have been collected in the caves of Cuba, Santo Domingo, Porto Rico, and the Lesser Antilles; but caves are not the only localities where they have been found. It may be pointed out that the shelter of a cave is well adapted to preserve wooden objects.

Dorsal, ventral, and lateral views of the specimen are shown in the accompanying plate (Plate K). The maker evidently intended to represent a human figure, the ventral side (Fig. *a*) of whose body is modified into a shallow bowl while the convex dorsal surface (Fig. *b*) is marked by four chevron-shaped elevations resembling

* The author is unfamiliar with this custom among the Taínan people, who probably made this image. In the account of offerings to the gods "cakes (cassava), roses, flowers and fragrant herbs," are mentioned by Gomara as offerings.

† The author takes this opportunity to thank Mrs. Beauregard for sending these dimensions and for other kindnesses.

ribs. The arms are extended beyond the body behind the head, while both legs are appended to the hips on the opposite side and so flexed that the knee joint of the right and left legs are bent in opposite directions. The flexure of the legs is difficult to explain unless the bowl-like depression is supposed to be situated on the ventral surface.

The upper arms bear engraved representations of armlets and incised bands encircling the legs. These correspond to the bands described by historians and ethnologists as tied about these appendages. The fingers are bent inward on the palms of the hands while the toes are flexed on the soles of the feet in a characteristic way, to which attention has often been called in descriptions of examples of Antillean art.

Three views of the head, two of which show profiles, indicate that the face is turned in the same direction as the concavity of the abdomen. The top of the head has what appears to resemble a cap, indicated by engraved lines bilaterally arranged, extending to the level of the upper rims of the eye depressions on each side. It is probable that in these eye sockets, now empty, were formerly inserted eyeballs made of metal, shell, or stone, the attachments of which are still visible. The mouth, nose, and chin have human rather than animal contours, the last mentioned being probably once filled in with a plate of shell or metal on which teeth ("fishes' teeth" of Kelsey's MS.) were represented.

The arms are attached to the back of the head and do not extend above the crown. The side views of these appendages (*c*, *d*) show fingers, more accurately speaking, claws, turned in on the palms of the hands. The elbows seem to have their natural flexure but no one save an athlete could bring his arms to the back of his head in the manner indicated, if we suppose the concavity to be the ventral region of the body. On the other hand, if the concavity indicates the dorsal region, while the arms would readily be raised in the position indicated, they would not be brought before the face as here shown. Evidently human anatomy is not carefully followed in the direction in which the limbs are flexed.

The attachments of legs to the trunk and the direction in which the knees are bent is even more anomalous. If Figs. *c* and *d* represent the figure standing, and the position of the face be an index of the ventral region, and the hips attached to the dorsal region, the concavity of the body would likewise be ventral and the ribs dorsal. The only objection to this theory of orientation is that the Antilleans generally represent the vertebræ or backbone by notched projections, which are absent in this specimen.

It will be noticed that the dorsal side of the hip joint (Fig. *b*) is rough, as if something had been broken or cut off at this place. As the supports of seats would naturally be situated in this position it is possible that legs formerly existed here and have been removed.

Interpretation.

This object so closely resembles the specimen in the British Museum, which Mr. Joyce* has identified as a seat, that there is little doubt that the use of both was the same. A superficial examination of the various other objects that have been identified as *duhos* (seats) cannot fail to convince one that West Indian objects of widely different forms and probable uses had been referred to by archæologists under this group. The author has been led to re-examine specimens known to him to have come from the West Indies in order better to classify the group, and to determine the proper identification of the carved wooden object we are considering.

* "Prehistoric Antiquities from the Antilles in the British Museum" (*Journ. Roy. Anthr. Inst.*, Vol. XXXVII, July-Dec., 1907).

On comparison of photographs of the Missouri specimen and Mr. Joyce's illustrations and description of that in the British Museum, the author believes that while both have general likenesses, there are minor differences of sufficient interest to merit the reprinting of the only known description of the former, especially as these two are the only representatives of a type of which the British Museum object is the other known member yet described. Mr. Joyce's references to the British Museum specimen are quoted entire:—

"There is only one wooden seat in the British Museum but that, an old and interesting specimen, is accompanied by fairly complete information. This specimen also belonged to the Christy Collection, having been presented in 1875 by Captain Melfort Campbell. An old label pasted in the middle of the seat and dating to a period anterior, reads, 'Found in a cave at St. Domingo, presented by General S. 'Imbert, Dominican Army.' The donor supplied the information that the specimen which was given to him by General Imbert was 'found at Isabella, thirty miles from 'Porto Plata, St. Domingo, in a cave inhabited by Indians in former times.'

"Cut from solid, heavy, hard brown wood. Ithyphallic figure of a man lying prone on knees and elbows; the forehead is much flattened, and represents artificial deformation; the eyes are deep circular cavities (diameter 18 mm.), and look as if they had held inlay; the mouth is open and the lower jaw very prominent; the ears are in lateral relief and are represented with circular discs in the lobes; a line in sharp relief runs from the point of the nose over and behind the ears; the chin rests on the fists, which are clenched with the nails downwards; ribs and navel are shown in relief, and also the male organs; the back is hollowed out to form a seat; the legs are parted, and the right bent sharply at the knee, so that the foot is elevated in the air; below each knee is a transverse groove encircling the leg, representing a knee bandage, that on the left broader than that on the right; these grooves were, evidently, not inlaid, since they are filled with engraved ornament; the ankle joints are shown in relief, the feet are short and broad, and the toes bent over. Total length, 730 mm. British Museum, Christy Collection, 9753."

The above description of the British Museum specimen applies equally well in general to that in the Missouri Historical Society, leaving no doubt that the two belong to the same type. There is a close similarity between them and objects called *duhos* by the Antilleans, and Joyce's identification of the British Museum specimen has much in its favour. As they must be regarded as very aberrant specimens of seats, it is well to discuss their relation to other known forms of *duhos* previously described from the West Indies.

Among objects that have been referred to as seats there may be mentioned at least two, possibly three, types: (1) zemi stools; (2) tabla (tables), receptacles for offerings used in rites; (3) mortars or grinding objects.

In their simplest form we find idols or zemis seated on stools which are generally identified as *duhos*. Two of these zemi stools are known—one figured by M. Pinart,* the other by the author.† The former is made of burnt clay and has seated upon it a clay representation of an idol. The latter, now in the United States National Museum, is made of wood, on which two wooden idols are seated,‡ and differs from the first-mentioned not only in shape but also in material. This stool has a vertical back which is not represented in clay images. There is every probability that the seats upon which these idols sit or squat may be identified as zemi stools.

Still further modifications of stools, but without idols seated upon them, also

* *Note sur les Petroglyphes et Antiquities des Grandes et Petites Antilles.* Paris, 1890. (Folio facsimile of MS.)

† *25th Annual Report, Bureau of American Ethnology*, Plate xci, *a*, *a'*.

‡ *Op. cit.*, Plate lxxxii, *a*.

occur in various collections. Several of these, made of wood, are large enough to serve as seats for men, and there is authority from early Spanish records that a cacique used similar seats when he functioned as a zemi. The members of the embassy sent by Columbus on his first voyage, to a village in Cuba, were conducted by the natives, so the account reads, to seats with fantastic animal decoration—probably because they were regarded as caciques or zemis. The dead were said to have been seated on similar stools, the dead being also regarded as zemi in their ancestor worship.

There are two well-known types of zemi stools destitute of the seated idols, one of which has a head carved on the margin of the horizontal part, the other on top of the vertical portion. In the first type the head of an animal is cut in relief on the middle of the anterior rim between the legs, and in the second the head, and often the shoulders and arms, are cut on the upright. Both types may have been used as zemi stools. In these the idol is absent, but the reliefs cut on the seats are significant. The decorations on them suggest the St. Louis specimen, but they have neither a form nor the size requisite for a cacique seat. It may well have been that the concavities which they share with our specimen served for the deposit of ceremonial offerings to the zemi represented about them.

Several other objects identified as seats may be mortars used for grinding chocolate or seeds. The objects referred to are mounted on four legs, and are sometimes without ornamentation, but often the carvings on them are conventionalized into human or animal forms, rudimentary heads or appendages being found on rims of the concavities.

The conclusion arrived at by comparative studies is that the wooden object to which this paper is devoted—and the same may apply also to that described by Joyce—was used neither as a seat nor mortar, although it has some points of resemblance to the former. It may have been a ceremonial object, or even an idol, with a cavity in which cakes, flowers, or fruits were placed during religious rites.

J. WALTER FEWKES.

Obituary. Keith.

Gustav Magnus Retzius. *By A. Keith, M.D.* 79

It is with deep regret that we chronicle the death of one of the most distinguished Honorary Fellows of the Royal Anthropological Institute—Professor Gustav Retzius. He was born in Stockholm in 1842, the year in which his famous father, Anders Retzius, initiated the method of describing the shape of skulls and heads in the terms which their breadth bears to their length. Anders Retzius, who held the chair of Anatomy in the Caroline Medico-chirurgical of Stockholm, died in 1860; sixteen years later his son succeeded to his chair, and devoted his life and the ample means, which a sympathetic and fortunate marriage placed at his disposal, to continuing the lines of investigations opened up by his father, until his death, on the 21st of July, 1919, at the ripe age of 77. It may be said of him that he did more to enrich the literature of Physical Anthropology, Anatomy, and Physiology than any other man of his time. His numerous monographs and atlases deserve to be called princely, whether we consider the finish and magnificence of their illustration, their full and accurate record of observation, or the exactness of the methods which were employed in their production.

His first task, undertaken in 1864, when he was only 22 years of age, was to collect, edit, and publish his father's contributions to Anthropology. We will not stop to enumerate his numerous minor contributions to the archæology of Sweden, nor his papers dealing with the skulls and brains of Lapps and Finns, but pass to the atlas which he published in 1900, entitled *Crania Suecica Antiqua*, in which

all the prehistoric skulls of Sweden are described and delineated—a work which is fundamental for the proper understanding of the prehistoric races of Britain. Two years later, in conjunction with Professor Karl Fürst, he issued a quarto volume, *Anthropologia Suecica*, the standard work on the physical characters of the inhabitants of Sweden. Ten years ago the Royal Anthropological Institute invited him to give the Huxley Lecture, which he devoted to a consideration of the "So-called North European Race of Mankind." In that lecture he expressed his fears that the evolutionary machine introduced into Europe by our modern industrial form of city life was bearing hardly on the type of man which had flourished in Scandinavia and Britain in past times, and took a gloomy view of the future of the Nordic race. He did not fear an adverse fate for the Nordic type in the battlefield, but the verdict of the industrial workshop was ominous. But whatever may be the fate of the Nordic race, no fellow of the Institute who had the fortune to listen to the Huxley Lecture of 1909 can forget the graciousness, courtesy, and modesty of the lecturer, nor the pleasant memories which his wife and he left with his audience.

GUSTAV MAGNUS RETZIUS.

Many of his researches were directed to elucidating the relationship of mankind to apes and of one race of mankind to another. In this category come his *Das Menschenhirn*, published in two volumes in 1896, his examination of the microscopic structure of the cortex of the brain, his investigations of the spermatozoa of anthropoid apes, the retroversion of the upper extremity of the tibia, and many other contributions. His chief researches relate to pure anatomy, particularly to the finer structure of the internal ear, of the nerve system, and of the organs of sense. In that field his publications represent permanent contributions to our knowledge of the animal and human body.

A. KEITH

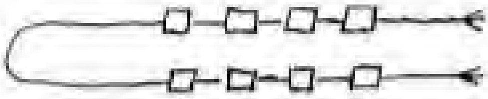
Yoruba : Folklore. Wyndham.

The Divination of Ifa (A Fragment). *By J. Wyndham.* **80**

Ifa was the Messenger of the Gods, and is consulted by the Yoruba on all subjects.

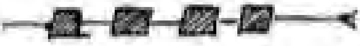
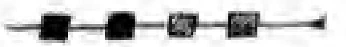
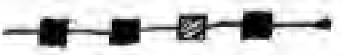
His priests (called Babaláwo) profit considerably by divination, which they perform with sand on a circular board, or with a charm called Okpéllè.

Okpella consists of eight pieces of bark on a string. These eight are arranged in fours, thus :—



Each of the pieces of bark may fall either with the outside or the inside showing. Consequently each set of four may fall in sixteen different ways, having different names and meanings.

The sixteen names are :—

1.  Ógbè—all face down—inside showing.
2.  Oyéku—all face up—outside showing.
3.  Iwòri.
4.  Edi.
5.  Obára.
6.  Okáran
7.  Róshun.
8.  Owórin.
9.  Égutan.
10.  Osan.
11.  Erétè.
12.  Etúrah.
13.  Olágbon.
14.  Ekka.
15.  Oshé.
16.  Offun or Orùngun.

When Okpelle is thrown on the ground and the two fours are identical the resultant is called:—

Ogbe Meji (i.e., Two Ogbes)	Egutan Meji
Oyeku Meji	Ossa Meji
Iwori Meji	Erétte Meji
Edi Meji	Eturah Meji
Obára Meji	Ologbon Meji
Okanran Meji	Ekka Meji
Roshun Meji	Oshe Meji, or
Awórin Meji	Offun Meji

These are called the Sixteen Messengers of Ifa.

The chance, however, of the four on the Babalawo's left agreeing with that on his right is only one in sixteen. The other fifteen combinations which may appear with Ogbe on the right are called: Ogbe Yeku, Ogbe Wori, Ogbe Di, &c. Similarly with the other Messengers of Ifa. These combinations are called the children of the Messenger who appears on the right. Thus, Ogbe Yeku is a child of Ogbe; Oyeku Logbe is a child of Oyeku.

From this it will be seen that Okpelle can show 256 combinations.

Procedure.—A man comes to a Babalawo to consult Ifa. He places a gift of cowries (to which he has whispered his needs) before the Babalawo. The latter takes Okpelle and places it on the cowries. He then says, "You, Okpelle, know "what this man said to the cowries. Now tell me." Then he lifts Okpelle and lays it out on the floor. From the messenger or child which appears the Babalawo is supposed to divine that his client wants a son, has stolen a goat, or has a toothache, as the case may be. He then tells him what he must bring as a sacrifice to achieve his ends. In all cases the sacrifice (or a large part of it) is offered to Esbu (the devil) for fear that he might undo the good work. For instance, the client is poor and needs money: Edi Meji appears, and the Babalawo tells his client to bring a dog, a fowl, and some cowries and palm-oil. The man splits the dog and the fowl; puts palm oil and cowries inside them, and takes them to Esbu. The Babalawo presumably takes the bulk of the cowries for himself.

The appearance of Ogbe Meji promises long life, but a goat must be brought.

If a man has no children and Oyéku Meji appears, he must bring a ram and a goat.

Iwóri Meji demands eggs, a pigeon, and cowries from a sick man.

Edi Meji.—As above.

Obára Meji.—A sacrifice of 2 cocks, 2 hens, and 250 cowries is needed to purify after menstruation.

Okanran Meji.—A goat and 500 cowries bring on menstruation.

Róshun Meji.—A she-goat and 2 hens to cure a headache.

Awórin Meji.—4 cocks and 800 cowries to bring about the death of one's enemy.

Egutan Meji.—A ram (large) and 1,200 cowries to cure a bad bellyache.

Ossa Meji.—Butcher's meat and 4 pigeons to drive away witchcraft.

Erétte Meji.—2 pigeons, 2 cocks, and 600 cowries to get children.

Éturah Meji.—One large gown, a sheep, and 300 cowries to cure eye disease.

Ologbon Meji.—Sacrifice 4 snails and 4 pigeons if one suspects someone wishes to poison one.

Ekka Meji.—4 hens, oil, and 700 cowries for ear-ache.

Offun Meji.—If children keep on dying, sacrifice 16 snails, 16 rats, 16 fishes, and 1,600 cowries, and the following children will live.

Osse Meji.—8 snails, 8 pigeons, and 800 cowries for children.

Ogbe Yeku.—(*a*) If a man has no money, he must bring 4 pigeons, 2 shillings, and soap. The Babalawo mixes leaves (*ewe-ire*) with the soap as a charm, and the man must use it for a bath.

(*b*) If a man is very ill, he must offer 3 he-goats and 5*s.* 6*d.* He will then be better.

Ogbe Wori.—(*a*) If a man is sick, he must offer 8*s.* and a sheep. Otherwise, he will die.

(*b*) If a man needs money, he must bring thread and 6 pigeons and buy soap. The Babalawo gets *ewe ofi* and puts them on the soap with the pigeon's blood. The thread is put inside the soap. The man then washes.

(*c*) If a man has committed a crime, he must bring 7 cocks and 35*s.* The Babalawo kills the cocks, and takes the 35*s.* for himself. He takes the sand of Ogbe Wori from the Ifa board and puts some on each cock's breast, with 260 cowries. Five of the cocks are then given to Eshu and the other 2 are taken to a place where three roads meet. Then either a necessary witness will not appear in court or the accused will be found not guilty.

(*d*) If two men want the same woman, and Ogbe Wori appears (when one of them consults Ifa), the Babalawo asks for 4 hens and a he-goat. The woman then becomes the client's wife. Eshu gets the hens and the goat's blood; the Babalawo, the goat.

J. WYNDHAM.

REVIEWS.

Anthropology.

American Journal of Physical Anthropology, Vol. II, No. 1. Washington: March, 1919. **81**

This journal continues its course of useful information. In the present number the editor, Dr. A. Hrdlicka, has a valuable paper on Anthropometry, indispensable for reference, describing the preliminary efforts from 1859 onwards to initiate and to systematize the methods used, and giving a carefully annotated and illustrated translation of the Report of the Special Commission at the Monaco Congress* in April, 1906, with the whole of the many points in skull measurement fully defined.

No British representative was available for that Commission, but at the following Congress, held at Geneva, September 9–14, 1912, the Anthropometric Commission had four British among the twenty-four representatives of eight countries, and Dr. W. L. H. Duckworth was one of the three recorders. The translation of the report of this second commission is here given, and consists of an Introduction, the general principles and detailed definitions of the bodily measurements approved by the Commission and the Congress, with some further resolutions. Dr. Hrdlicka adds: "The task undertaken is not yet finished; but what has been "done furnishes a sound nucleus for further development." When an international association of anthropologists is formed (as outlined at the Conference held in London,† June 4, 1912, after the 18th International Congress of Americanists), it is to be hoped that a permanent Anthropometric Board may be instituted to deal with all questions respecting methods and instruments.

Dr. G. G. MacCurdy follows with further remarks on the Conference at the Royal Anthropological Institute, and a translation of the circular letter sent out to anthropologists some months ago by members of the École d'Anthropologie of Paris, in which they suggested the founding of a permanent International Institute

* Thirteenth Congress of Prehistoric Anthropology and Archæology.

† Called by the Royal Anthropological Institute.

of Anthropology for the allied nations, with a central office. He thinks that a preparatory congress might be called to consider the important questions of budget, personnel, etc. But in the present unsettled state of the world, private and individual efforts at co-operation, and correspondence on the many subjects of interest, would be more practical than formal gatherings which cost money. The letter of the Écoles enumerated some of the points made specially prominent by the war, such as: Political organisation, varying according to races and tradition; the rôle and evolution of religious ideas; racial and ethnic aptitudes revealed by the war; persistence and transformations of national antagonisms; dangers and advantages of crossings among different races, etc.

The last-named is of peculiar importance. The dreadful combinations to be seen in the south-western United States, resulting from the meeting of Anglo-Saxons, Negroes, Indians, Mexicans, and Chinese may be partly the cause of the unrest in that border region. Mongrels, of no country, they are easily led into mischief. What would happen in Australia if there were no colour bar?

The National Research Council, organised in 1916 at the request of President Wilson, by the National Academy of Sciences, also has a place here, with its Articles and thirteen Divisions, the last being that of Anthropology and Psychology. The Council is to hold an annual meeting in Washington in April. At the meeting of the American Association for the Advancement of Science, held at Baltimore, December 1918, there were discussions and resolutions in Section H, afterwards embodied in a Report to the President of the Research Council, signed by F. Boas, A. M. Tozzer, and Ales Hrdlička. This should be read by all those who are interested in general anthropology (pp. 109–111), and its relation to scientific research. Anthropology needs more humanity, deeper insight into the problems of human conduct. It is not merely a matter of correct measuring of bones, or collecting details of disgusting customs. At present most of the workers specialise on the lines with which they happen to be brought in contact, and see little beyond their immediate field. They have limited means for extended research and their Institutions seldom help them. Ample funds for the proper training of young men of suitable capacity are the first necessity.

Amongst other articles in this number is one by R. S. Bean and Wilmer Baker, of the Anatomical Laboratory, University of Virginia, on "Racial Characteristics of Spleen Weight in Man," based on post-mortem records from hospitals in the United States. The spleens of 1,341 white men, 1,038 negro men, 441 white women, and 554 negro women were utilized for the study. The authors present tables of detailed data on these spleens that could be considered normal, and conclude that the spleen of the negro is smaller than that of the white.

Louis R. Sullivan, of the American Museum of Natural History, was able to measure the "Samar" United Twins (Philippines), in July 1918, at Coney Island. They had been previously described by Dr. R. M. Riggal in the *British Medical Journal* of 1911, being twenty-two months old at the time of his examination. At ten years old they were bright intelligent little fellows, well educated, and spoke good English. The photograph shows them well clothed. The left twin is right-handed and the right twin left-handed. They are of mixed Malay-type.

The same author is represented in a notice of his paper published by the American Museum, 1918, on "Racial Types in the Philippine Islands." This is a review of the data which have gradually accumulated during the last thirty years, resulting in the conclusion that "the bulk of the population is included under three "racial types: (1) Malay with distinctly Mongoloid affinities, comprising about "nine-tenths of the total; (2) Indonesian, next in point of numbers, with Mongoloid

" affinities but in lesser degree than the Malay type; and (3) Negrito with Negroid " affinities." But native Mexicans were deported there continuously during the centuries of the Spanish occupation of Mexico, so that there must be some Mexican strain. The constant traffic to and fro was one of the remarkable features of the Spanish rule.

A. C. BRETON.

Oriental Studies.

Bulletin of the School of Oriental Studies. 151 pp. Published by the School of Oriental Studies, London Institution, Finsbury Circus, E.C. 2, 1918. Price 6s. **82**

The *Bulletin of the School of Oriental Studies* contains an important enumeration and description of the Indo-Aryan and Dardic vernaculars by Sir George Grierson, which will be welcomed as supplying a gap in the description of Indian languages caused by the incomplete "Linguistic Survey." The same number contains a translation by Dr. L. D. Barnett of Shadakshari Dêvar's description of Paradise in the Sabarasankara-vilasa, a Canarese poem of the seventeenth century, and a discussion of Bengali sounds by Mr. J. D. Anderson. China is represented by "Notes on the Nestorian Monument at Sianfu," by Dr. Giles, and translations from the works of Po-Chü-i, a ninth century poet and prose writer. Africa has two papers, "Hausa Wit and Wisdom," by Mr. J. Withers Gill, and Swahili poetry by Miss Werner.

The only historical contribution is an excerpt by Prof. Margoliouth from the chronicle of Miskawaihi describing the Russian seizure of Bardha'ah, in Azerbijan, in the tenth century.

The *Bulletin* contains a few reviews and also an obituary of the famous French Sinologue, M. Edouard Chavannes, who died on the 27th January, 1918.

SIDNEY H. RAY.

PROCEEDINGS OF SOCIETIES.

Anthropology. British Association.

Eighty-seventh Annual Meeting of the British Association for the Advancement of Science, held at Bournemouth, September 9–13, 1919. Proceedings of Section H (Anthropology). **83**

The Anthropological Section of the British Association met at the Municipal College, Bournemouth, from September 9th to 13th, under the Presidency of Prof. Arthur Keith, F.R.S.

Prof. Keith's address was entitled "The Differentiation of Mankind into Races," and consisted in an application of the Theory of Hormones to explain Racial Characteristics. [To be published in full in *Rep. Brit. Assoc.*]

ETHNOLOGY AND PHYSICAL ANTHROPOLOGY.

Harold Peake.—*The Finnic Problem.*—The modern inhabitants of Finland contain both Nordic and Mongoloid elements, but the balance of evidence tends to show that the language and tradition are derived from the Asiatic element. A fresh examination of the archæological evidence seems to show that the first wave of these Mongoloid people arrived in the Baltic region on the retreat of the Ice Sheet, and were responsible for the Maglemose culture, which developed later into that known as East Scandinavian or Arctic. Towards the close of the Neolithic Age the Nordic people arrived in Denmark from the Russian Steppes, and advanced into Scania and Westergotland, driving before them the Maglemose-Arctic folk, who retreated to the north, where they survive as Lapps. Further Mongoloid tribes were well established at the junction of the Oka and the Volga early in the Bronze Age. In the middle

of that period they were occupying the margins of the Finnish lakes, and at the same time Nordics from Sweden were occupying the Baltic seaboard. In the fifth century B.C. the Nordics took to the fjords and to piracy, and there was a general movement to the south and west. Meanwhile the Mongoloid tribes occupied the whole of Finland, the Baltic provinces, and East Prussia. When, about A.D. 1000, the period of piracy ceased, fresh Nordic immigrants arrived from Sweden, who were the ancestors of the present Nordic population of Finland.

Miss M. A. Czaplicka.—*History and Ethnology in Central Asia.*—Our existing classification for Eastern Europe and North and Central Asia, is based on historical rather than ethnological data. In the "Ural-Altaic" group are included five "races"—Finnic, Turkic, Tungusic, Samoyedic, and Mongolic—who are said to be linguistically alike but, otherwise, to form separate races. But the "Mongolic race" cannot be shown to form a distinct group in the same sense as the other four; and its appearance in the same ranks with Turks and Finns is due to the ethnologists' uncritical adoption of the history of the Jinghis Khan period. Ethnologically the Mongols form a bridge between the Tungus and the Turks, originating in a mixture of those two races on the steppes of Mongolia.

Another misleading term "Tatars," is simply a name of Tungusic origin for a clan which at the time of Jinghis Khan belonged to the same confederacy as did the Mongol clan.

Rev. Francis A. Allen.—*Traces of Polynesian, Melanesian, and Australoid Elements in Primitive America.*—The writer brought forward evidence to support the view that Melanesian, Polynesian, and Australoid stocks are represented in the native populations of America.

Professor H. J. Fleure.—*A Comparison of an Ancient and a Surviving Type of Man.*—Geographical study of anthropological types in modern populations has revealed casts of persons resembling in many ways types of pre-Neolithic periods, especially Combe Capelle and closely related examples.

A number of skulls from long barrows in Britain, from certain French dolmens (Bas Meulins and Billancourt) and from Swedish megalithic graves show a grading from Combe Capelle characters to Nordic. Modern representatives of these characters have been found in Somaliland, Abyssinia, and Egypt, Sardinia, Tras-os-Montes, Portugal, North Italy, the Rhone Valley, Austria, Rumania, Russia, and India. About twenty-four cases have been studied in the vicinity of Plynlymon and in remoter parts of S.W. Wales, all men of pure local descent. There is thus a strong presumption that we have a persistent type. Most of the individuals noticed in Wales have the hair rather straight with low orbital index and prominence of the zygomatics. But rare individuals with marked prognathism have the hair very curly, and suggest a "negroid character." The latter character is emphasized by Giuffrida-Ruggeri in the name "Eurafrican type."

F. G. Parsons.—*The Physical Characteristics of the Modern Briton.*—The author invited discussion as to the most valuable and practical data in determining the characteristics of the modern inhabitants of the British Isles. The following were suggested as especially significant in view of an analysis of the data at present available:—The cranial and cephalic index, attention being called to the fact that the index of the British Isles is the lowest in Europe; the orbital index and the orbital height, the latter being valuable as a means of discriminating between the Nordic and Mediterranean types; the cranial heights and facial indices; standardised orthogonal projections of the normae of skulls; stature and its quick reaction to environment; eye colour and the presence of brown pigment in hair and skin colour; and the features, especially the contour of the nose.

L. H. Dudley Buxton.—*The Anthropology of Cyprus.*—From head measurements of the living it would appear that the population of the villages investigated falls into two groups which cannot as yet, however, be differentiated with certainty into the Alpine and Mediterranean types. An examination of a short series of ancient skulls affords evidence that the ancient types correspond with the modern.

R. W. Pearson Chinnery.—*Some Glimpses of Unknown Papua.*—The communities of woolly-haired people discovered in recent years in the mountain regions of New Guinea are distinctly shorter than those of the bush lowlands, who in turn differ physically from the coastal people. It will be found on further investigation that a Negrito-Papuan element exists also in the tribes of the Owen Stanley Range, all of which appear physically to be the results of a mixture between earlier stocks of short and tall light-yellow and dark-skinned peoples.

ARCHÆOLOGY.

R. R. Marett.—*Recent Archæological Discoveries in the Channel Islands.*—(1) *La Cotte de St. Brelade.*—A cutting 12 feet deep has been driven from outside the entrance along the W. wall of the cave. Immediately beyond the entrance there existed in Mousterian times a sloping platform, where flint-knapping operations were carried on. Above 500 pieces, ranging in quality from mere workshop refuse to highly finished implements, have already been unearthed here. In the vicinity is a rich rodent bed, which presents some peculiar features.

Grotte de la Belle Hougue.—A cave has been discovered which, may be, contains Pliocene remains. The finds include shells of various species, the most interesting of which is *Astralium rugosum*, at present confined to more Southern waters; and teeth, bones, and numerous pieces of antler belonging to *Cervidæ*, which Dr. Andrews is at present disposed to bring into close relation with *Cervus Etueriarum* and *Cervus Issiodorensis*, Pliocene deer from Auvergne. Associated are small stalactites of unique occurrence in a Jersey cave.

T. W. M. Guérin.—*Notes on the Discovery of a Human Figure Sculptured on a Capstone of the Dolmen of Déhus, Guernsey.*—The recently discovered sculptured human figure on the under surface of the second capstone of the central chamber of the dolmen of Déhus, Guernsey, shows an affinity to the anthropomorphic figures of the late neolithic and æneolithic periods of the valleys of the Seine and Marne and of south-eastern France. Its presence in the central chamber, the first structure to be erected, proves the late date of the dolmen. The worship of the divinity represented by the figure existed for a very long period in Guernsey, one of the two existing statue-menhirs in the island being probably of the Iron Age.

J. L. Myres.—*Excavations in Cyprus in* 1913.—(1) In a Bronze Age necropolis at Lapathos on the north coast, a sequence of tombs was obtained covering the "Early" and "Middle" Periods of the Bronze Age. The "Middle" period began not earlier than the Twelfth Dynasty of Egypt.

(2) The late Bronze Age necropolis at Enkomi, near Famagusta, yielded a good deal of information as to the history of an Ægean colony on this site.

(3) The well-known "megalithic" monument near Enkomi, popularly called "St. Catharine's Prison," was shown to belong to the historic necropolis of Salamis, and probably to its Græco-Roman stage.

(4) The "Bamboula" mound in the outskirts of Larnaca was shown to consist of late Greek and Græco-Roman stratified débris, overlying a fortification wall and other remains of the Græco-Phœnician city of Kition. The earliest remains here go back only to the beginning of the Early Iron Age.

(5) A sanctuary site at Levkonika yielded a series of Cypriote sculpture beginning in the seventh or eighth century B.C. The figures were those of male votaries carrying various emblems of a local deity eventually identified with the Greek Apollo.

(6) The Byzantine site at Lampousa on the north coast near Lapathos yielded only evidence of wholesale quarrying of the older settlements during the Middle Ages.

STANLEY CASSON.—*Some Balkan Antiquities found during the period* 1915–1919.—A number of accidental discoveries were made during the war in the course of military operations in Macedonia, but owing to the circumstances thorough systematic investigations were not possible. A number of finds were made in prehistoric mounds, including incised, pebble-polished and painted vases, among the latter being examples of "red on white" ware similar to that found in Thessaly. Imported wares and evidence of foreign influence were present.

The balance of evidence showed that the early civilisation of Macedonia belonged to the North rather than the South.

A number of Roman sites were identified and a number of isolated discoveries of the classical period were made.

H. KINAHAN.—*Recent Discovery of an Unrecorded Type of Circular Earthwork in the New Forest.*—This circular earthwork is situated on the west side of Hatchet Moor, Beaulieu Heath. The circular bank is slightly over 2 ft. high, and 21 ft. wide; and is continuous the whole way round without gap for entrance. There is neither outer nor inside ditch, nor central mound.

The setting of the earthwork on the open moor in association with bowl-barrows; the width, spread, appearance, vegetation and consolidation of the circular bank—all support the conclusion that it is of Bronze Age date.

The earthwork differs from a typical disc-barrow in not having either inner ditch or central mound. It may have been intended for purposes of religious ritual, and only secondarily, if at all, for sepulchral uses.

G. BROWNEN.—*Hodenesbury or Hengistbury of Prehistoric Time.*—On the western bank of the estuary of the rivers Avon and Stour are the prehistoric (earthwork) northern defences of an important settlement commanding the waterways from the Solent and Channel to the hinterlands of Wilts, Dorset and Somerset and their prehistoric sanctuaries, &c.

The township or settlement possessed a port just within the estuary with an acropolis, and has afforded proof of trade with ancient Gaul more than two millenia ago. Among the many and curious finds obtained was a hoard of some thousands of coins—a few only being Roman and dating from the Republic nearly to the Roman departure from Britain. The great bulk was British and Gaulish in type. It is suggested that this port is to be identified with that named Bolveltaunia mentioned in the Ravenna lists. This would harmonise with the late Sir John Rhys's selection of the river Stour as the boundary line betwixt the Brython and Goidel.

Archæological Investigations in Malta.—Report of the Committee.—This year's work has consisted of excavations at Ghar Dalam, in that part of the cave floor separating the Trench described in the Report of the British Association of 1916, and Trench No. II, described in the report published in the *Journal of the Royal Anthropological Institute* of 1917. Potsherds belonging to various epochs, some being of a very fine pattern, and a few implements were met with; animal bones were, as usual, found in great profusion. Human remains occurred at a lower level than that in which the Neanderthaloid molars were found in 1917.

Later work consisted in the digging of three trenches. In Trench I potsherds of various epochs were found in profusion. Animal bones were also found in the greatest abundance, and evidence of man's work has been traced to a rather low

level. In Trench II potsherds were not so common as in Trench I, but animal remains were found in equal abundance. Amongst the important finds in this trench are several specimens and many fragments of a marine shell belonging to a species which is at present very rare in Maltese waters, not to say extinct. Trench III is still being excavated. It shows some groups of stalagmites of various sizes. A coating of stalagmitic formation has preserved many of the animal remains in their anatomical position.

Discussion.—In a joint meeting with Section C (Geology) Mr. Reginald Smith opened a discussion on "The Post-Tertiary Geology of the District [of Bournemouth] " with special reference to the Flint Implements in them," his communication being illustrated by a collection of flint implements lent for the occasion.

ETHNOGRAPHY.

F. J. Richards.—*Badaga Clans.*—The Badagas are not an "autochthonous" jungle tribe, but are comparatively recent immigrants from the Mysore country. Accounts hitherto recorded of the sections of the Badaga community fail to discriminate between endogamous groups and exogamous clans. The typical Badaga hamlet consists of members of one clan, related to the Badagas of other hamlets either as "brothers" or "sin laws." Clan hamlets are federated into clan cult groups for celebration of agricultural rites. Badaga Cult Groups are federated into Nads and associated with other endogamous groups of the Badaga community and other Hill tribes for purposes of economic and social autonomy. The important ceremonies of the harvest festival were described in detail.

The Badaga community exhibits traces of at least two migrations, (*a*) the early Badagas and the Hoysala conquest, (*b*) the Ummattûr conquest and Lingâyat influence. Associated clans are apparently intermediate.

E. W. Pearson Chinnery.—*Stonework and Goldfields in Papua.*—The objects unearthed during gold-digging operations in the mountainous districts of the interior of Papua include pestles, some carved to represent birds with snake-like heads, and some encircled by knobs; mortars of granite; axe heads of obsidian; pierced quartz objects of various shapes (Yodda). On the summit of a large hill near the Yodda goldfields is a large mortar and at the Giriwo river is a human image of which the forehead retreats to a point at the back of the head and the hands are crossed on the stomach. Near the mouth of the Giriwo river ornamented pottery, and at Rainu (Collingwood Bay) ornamented pottery obsidian objects, pestles and conus shells with incised designs have been found. On the S.E. coast, near the old Gibara (Milne Bay) goldfield, stones with chipped concentric circles, standing stones and circles of stone sitting places have been discovered.

The evidence of the stone objects in Papua shows that it was visited at some time by stone-using people who differed in many respects from the present inhabitants. It would appear from the distribution and character of the objects that the stone-users had some interest in a gold-bearing country.

RELIGION.

A. M. Hocart.—*Death Ritual in Eddystone Island of the Solomons.*—The Eddystone Islanders expose the bodies of their dead in the embryonic position. After the funeral four men catch the soul on a dracæna leaf and a ring, in order to secure the soul's services in divination. The widow may be strangled, but more often she is confined in a small enclosure with her knees drawn up; she may not wear any finery, nor eat of food cooked in the house. On the fourth day a big feast is held, at which a long prayer is recited which enables the soul later on to go to the land of the dead; but in the meantime it goes to wait in the cave at the

top of the highest hill. After ten or twelve days the skull is fetched away and put in the sun to bleach. The next event is a small feast called "Bathing." On the eighteenth day the skull is put into the skull-house by the mortuary priest, who makes a burnt offering of pudding. On the thirty-sixth day a small feast is held, and four baskets are burnt. On that day the ghosts come to take away the deceased to the land of the dead. Sometimes a *séance* is held at night to converse with the ghosts, who answer by whistling. Life in the other world is exactly as in this world, only it goes on at night. On the fiftieth day is a big feast, which closes the series for ordinary people. The day before they bury the string on which the days, or rather nights, were counted, and put a basket into the skull-house. For chiefs they have a feast on the hundredth night; then, after a lapse of time which depends upon supplies, they hold the final celebration or Night Festival, which is one of the great functions in Eddystone. In olden days it appears to have been often combined with the great head-hunting feast.

W. Crooke.—*The Cults of the Mother Goddesses in India.*—The cult of the mother goddess is prominent in Minoan, early Hellenic, Western Asia, and Babylonian ritual. In Vedic mythology goddesses hold only second rank, and some at least of the modern Hindu goddesses seem to have originated among the non-Aryans, who had at a very early period reached the agricultural stage. It has been the habit to derive all the mother goddesses from the cult of Mother Earth. But there are other types of goddesses—the Jungle Mothers, deified women, and elemental deities which cannot be readily connected with earth worship. The progress of anthropomorphism can be traced from the aniconic to the iconic stage, in the periodical rest and awakening of the mother goddess. Her energies are recruited in two ways; by the rites of the sacred marriage, and by the blood sacrifice, often specially of male victims.

Harold Peake.—*Santiago: The Evolution of a Patron Saint.*—Among the megalithic monuments on the western side of the Iberian Peninsula, which in course of time became objects of veneration, two—a menhir and a hallowed stone—stood near the port of Padron, and were known as *Patronus* and *Bareka*, "the skipper and the boat." In the Holy War which the Galatians waged against the Saracens, Santiago, or St. James, was selected for their patron, and his cult became associated in the minds of the natives with the megalithic Padron or Patronus. In spite of many attempts by bishops and others, it was found impossible to dissociate the two cults, and the traditional story of St. James gathered around itself many features which belonged to the original megalithic worship.

Professor Carveth Read.—*Magic and Science.*

Rev. H. J. D. Astley.—*Primitive Art as a Means of Practical Magic.*—Primitive artistry varies from the highest perfection, as in the cave-drawings of France and Spain, to examples that appear like the first efforts of children. But none of the work was done for a purely artistic purpose, or to gratify the æsthetic sense. Magic supplied the stimulus to the artistic instinct. This explains not only the drawings of animals, but also such drawings, for example, as those of the Dancing Women in the Cave of Cogul. To primitive man the image or symbol is the same thing as the living actor, and what is represented as being done by the symbol is as though it were being actually performed by the producer of it.

EXCURSION.

Members of the section visited the Dorchester Museum on the afternoon of Wednesday, September 10th, when they were entertained at tea by the Curator and Mrs. Acland. They afterwards visited Maumbury Rings, where Mr. C. Prideaux gave a short account of the results of the recent excavations, and the Maiden Castle Earthworks.

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FIG. 1.

FIG. 2.

FIG. 5.

FIG. 3.

FIG. 4.

ORIGINAL ARTICLES.

Ireland. With Plate L. Ridgeway.

An Irish Decorated, Socketed Bronze Axe.

By Professor Sir William Ridgeway, Sc.D., F.B.A.

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There are, of course, numerous examples of bronze celts found in Great Britain with more or less rude and coarse attempts at decoration, from the early flat celts and flanged celts with lines or chevrons rudely punched upon them,* palstaves with similar ornament† or with the common so-called "buckle and tongue" decoration, to the socketed celts with their sides adorned with coarse raised ribs (never less than three) and with coarse blob-like dots in which the ribs sometimes end, or which sometimes form chevrons, or with coarsely-formed circles, and frequently with a coarse raised line running round just below the lip of the socket.‡ Occasionally, as in the case of one of two socketed celts found together at Wicken, Cambridgeshire (Figs. 8 and 9), and in my own possession, the decoration is composed of much more refined and delicate lines. There is a blank space down the middle of each side, on either side of which are four raised lines. The socket in each of these two specimens is square with the angles rounded on the exterior. To this specimen we will presently have to revert.

The Irish celts, with the exception of the early ones made of copper, show a great variety of ornament—hammered, punched, engraved, or cast. Some of the flat celts are very finely decorated with incised chevrons, triangles, cross-hatchings, and other Bronze Age linear ornament, such as the fern-like patterns seen on not a few.§ They show a great fertility of design on the part of the artificers. Various combinations of chevrons are the most frequent. On the other hand, the socketed celts as a rule are without ornament, though a few are adorned with ribs ending in pellets similar to the British examples just mentioned. But to regard these various designs as placed on the axes for purely æsthetic reasons would be indeed rash in view of the results of modern investigations into barbaric art and ornament. In 1903 I gave reasons at the Southport‖ meeting of the British Association for believing that jewellery and every other kind of ornament arose not from æsthetic but from magical considerations, a doctrine expanded later in a paper entitled *The Origin of the Turkish Crescent.*¶

But a glance at the Plate will show that the axe that I am about to describe stands on a totally different plane from any of those just mentioned. Some sixteen years ago I was shown this unique specimen by a clerk employed in a shop at Kingstown, co. Dublin. He had recently bought it at an auction of household effects at a private residence in that town. It has therefore no provenance, although we will presently see some reasons for thinking that it may possibly have been made in co. Westmeath. The owner, a very intelligent man, had taken the axe to the National Museum in Dublin and had compared it with the fine series there shown, but had failed to find anything like it. I told him frankly that it was a

* Evans, Sir J.: *Ancient Bronze Implements*, etc. (1881), pp. 44–8, Figs. 3–7.

† *Id.*, p. 102, *Fig.* 98.

‡ *Id.*, pp. 117 *sqq.*, Figs. 123 *sqq.*;

§ Coffey, George: *The Bronze Age in Ireland* (1913), pp. 25–6; Evans, *op. cit.*, p. 67.

‖ *Rep. Brit. Assoc.*, 1903 (Southport), p. 815.

¶ *Journ. Roy. Anthr. Inst.*, Vol. XXXVIII, pp. 241 *sqq.* In the "Hermione" Lectures on Art, Dublin (1911, only published in summaries), I showed that from this source arose the arts of engraving, painting and sculpture; for the breaking up into linear ornament of a beast and human forms, *cf.* A. C. Haddon, *Evolution in Art*, p. 49, patterns derived from Frigate Bird, and B. Balfour, *Evolution of Decorative Art*, Figs. 11 and 26; for the linear pattern on the handles of the well-known Mangaia (Hervey Islands) adzes derived from the seated figure of a god, *cf.* Sir Hercules Read, *Journ. Roy. Anthr. Inst.*, Vol. XXI, pp. 146–7.

valuable specimen. As he had a taste for antiquities, and showed no inclination to part with his treasure, I did not press him to do so.

Not long afterwards when paying one of my customary visits to Canon Greenwell at Durham I told him of this axe with its beautiful chevron ornament, and asked him if he had anything like it in his wonderful collection, as I did not recollect having seen anything like it in his cabinet. He was greatly excited and said at once that he had nothing of the kind, although he had a finely-decorated socketed celt from Ireland, which I know, and which we then both examined, and which I here describe and figure (Figs. Nos. 6 and 7). "Don't miss that axe at any price," cried the old man, and more than once afterwards he asked me had I yet secured it. My visits to Kingstown ceased after 1906, and I lost sight of the axe. But some seven years ago the owner wrote to ask me to look at another bronze object which he had lately acquired, and offered to send me over at the same time the axe, in case I wished to have it photographed. I gladly accepted his offer, and duly returned both specimens. I heard no more until in May of this year I received a letter written by a friend of the owner on behalf of his widow, to say that her husband was dead and that she wished to sell the bronze axe and one or two other bronze objects. I at once made an offer which was quickly accepted, and the axe duly arrived.

The length of the axe from the lip of the socket to the central point of the crescent-shaped edge is 2⅜ inches (60 mm.), a fact not without significance, as we will see. I have figured full size both the sides, the two ends, and the mouth of the socket, as the oval contour of the last is of course not without importance for assigning its place in the bronze series, and thus obtaining at least some clue to its relative date. Inside the socket there is a raised rib running down the centre of each of the sides. It will be seen that the maker made a careful scheme of ornament for the whole of its surface, dividing it into four compartments by means of four fine curved lines in relief, each of which starts downward from the fine raised line running a little below the lip of the socket on each of the two sides and on the end which has no loop; each pair of these curving lines unites in one of the gracefully turned-up corners of the crescentic edge of the axe; the end panels thus formed have an elegant leaf-like contour (Nos. 3 and 4), the suture of the two moulds forming a kind of midrib. The loops in almost all other celts are coarsely moulded, but the artificer who wrought our specimen made a new departure by trifurcating the lower part of the loop. This ornamented loop may presently give us some clue towards the provenance of the axe.

Finally comes the great feature, the band or frieze of chevrons in refined and delicate relief running along the top of each side (Nos. 1 and 2) immediately under the delicate line running below the mouth of the socket. The drawing of the chevron pattern was distinctly better on one of the moulds than on the other, since the chevron frieze seen in No. 2 is clearly more skilfully drawn than that seen in No. 1. The moulds were probably made of stone, as there are four complete and seven half moulds for casting palstaves or flanged celts with stop ridges, and one complete and one half mould for casting socketed celts in the Irish Academy's Collection.* There is no axe with anything like this raised chevron design in the Irish National Museum or the British Museum collections now enriched by that of the late Canon Greenwell, nor does Sir John Evans describe any such in his *Bronze Implements*. My specimen may therefore be regarded, until a better turns up, as the *chef d'œuvre* of the art of casting bronze axes, and it confirms Canon Greenwell's dictum that

* Armstrong, E. C. R.: "On some associated finds of Bronze Celts discovered in Ireland" (*Proc. Roy. Irish Acad.*, Vol. XXXIII, p. 528).

the best products of the Bronze Age artificers of Ireland were the most beautiful with which he was acquainted.

I have already mentioned that Canon Greenwell possessed an Irish socketed axe with elaborate and refined decoration. When I obtained my specimen last May I was prevented by illness from going to London to compare it with examples in the British Museum. I therefore sent photographs of it to my friend, Mr. Reginald A. Smith, F.S.A., of the Department of Prehistoric Antiquities, asking him if there was anything like it in the National collections. With his unfailing kindness he promptly replied that while they had nothing like it with the chevron pattern, they had "an elaborate specimen from the Greenwell Collection (No. 1570), of just the "same length ($2\frac{7}{16}$ inches, 58 mm.) and a little narrower, with vertical triple ribs in "pairs on the faces, oval mouth and loop as in your own. It is said to be from

FIG. 8. FIG. 9.

TWO BRONZE CELTS FOUND AT WICKEN, CAMBS., 1892.

"Rathowen, Meath, but the county is probably Westmeath." I am enabled to figure this fine specimen by the kindness of my friend, Sir Hercules Read, F.S.A., F.S.A., the Keeper of the Department of Prehistoric Antiquities, to whom I am also indebted for the two photographs here reproduced (Nos. 6 and 7). It will be noticed that the decoration on the Greenwell specimen very closely resembles that on my own celt from Wicken (Fig. 8) described above, the differences being (1) that the Greenwell specimen is of far superior work; (2) that the Wicken has four raised lines on each side of the central space, whilst the Greenwell example has only three; and (3) that whereas the lines on the Greenwell celt are vertical and parallel

all the way, the lines on mine though parallel most of the way slant towards the edge and approximate at the lower ends. As I have observed above, the Wicken axe and its fellow have square sockets, with the corners rounded on the outside, whilst the fineness of the raised lines or ribs as compared with the great majority of those on socketed celts, combined with the square socket may indicate that they must be placed towards the end of the Bronze Age.

To return to the two Irish specimens. We saw that Mr. R. A. Smith pointed out that not only is the Greenwell specimen distinguished by its refined craftsmanship but that it is practically identical with mine in its measurements, the shape of the socket, and above all in the trifurcation of the loop; moreover, as we have seen above that the few Irish socketed celts with ornament are of coarse work, and that, therefore, these two celts stand quite apart in their technique, it is not unlikely that the same artificer—one of those geniuses who make new departures in their art or craft—was the maker of both these very exceptional specimens. But as the Greenwell axe is said to have been found at Rathowen in co. Westmeath, there is at least some probability that my specimen may likewise have been made in that area.

WILLIAM RIDGEWAY.

Obituary.

Duckworth.

Professor Alexander Macalister.

By W. L. H. Duckworth, M.A., M.D., Sc.D. **85**

News of the death of Professor Alexander Macalister must have fallen as a sudden blow on many of his world-wide acquaintances. Until a year or two ago time had scarcely touched his characteristic energy, nor had it sapped his powers. The magnitude and variety of those powers were almost proverbial among his more intimate friends, whose tribute was richly justified by the long list of achievements to which they could point.

While the recital of such a list is reserved for the sequel, some salient features claim notice here. Macalister commenced his professional medical studies at the age of 14. At the age of 16 years he was appointed a demonstrator at the Royal College of Surgeons of Ireland, and a year later he obtained his qualification to practise.

His first practical demonstration must have been given in 1860. Thenceforward he pursued his ideal of practical instruction for 59 years, and as lately as March, 1919, he was actively engaged in the dissecting room.

In the earlier years of that long period Macalister combined the practice of medicine with the profession of teaching not only human anatomy but also vertebrate and invertebrate zoology. In fact, his first published paper was connected with the subject last mentioned, while, as other writings testify, archæology, geology and field-botany made claims on his spare moments.

The friendship of Macalister and the late Dr. Samuel Haughton, of Trinity College, Dublin, began early in the "sixties." It constituted an event of significance in the career of the young practitioner and anatomist. Comparable in versatility to the subject of this notice, Haughton was (at the time in question) keenly interested in the subject of "animal mechanics." In Macalister Haughton found an enthusiastic colleague, of whom indeed his appreciation is expressed in the preface to his book on *Principles of Animal Mechanics*.

Stress has been laid on this work, for it involved the dissection of many remarkable mammals. Moreover, the muscular anatomy of those animals required special and minute investigation, and in the acquisition of the specimens, Haughton's influence with the authorities of the Zoological Gardens at Dublin must have been of no small account. Additionally, therefore, to his special studies in reference to mechanism, we find that a long series of memoirs on mammalian anatomy strikes the keynote of

Macalister's work for some twenty years after his first appointment as demonstrator. Thus also was gained the experience and the knowledge with which Macalister in later years rarely failed to point a comment on some muscular anomaly in the dissecting room.

In the same earlier years Macalister published two important text books on animal morphology, and these (like the *Textbook of Human Anatomy* published in

ALEXANDER MACALISTER.

1889) still provide many useful illustrations and records which are lacking in more elementary treatises. Of the latter, Macalister could also set two to his credit.

Academic distinctions came in rapid succession during this period. The demonstratorship (at the R.C.S.I.) was followed by election to the Chair of Zoology in the University of Dublin. Macalister had entered Trinity College in 1867, and at the time of his election to the professorship (1869) he was still an undergraduate

of the University. Indeed he had experienced the peculiar embarrassment of finding himself debarred from entering for a particular examination in which he would have been simultaneously examiner and candidate. In 1872 a Chair of Comparative Anatomy was founded in the University, and after the election of Macalister to this Chair, its scope and title were enlarged. It was about this time that Macalister became President of the Geological Society of Ireland, his presidential address being delivered in 1873.

Macalister held the professorship of Comparative Anatomy and Zoology from 1872 until 1883. In 1877 he added to his honours the professorship of Anatomy and Chirurgery in the University of Dublin, being at the same time Surgeon to Sir Patrick Dun's Hospital. In 1883 his participation in the teaching work of the University was brought to an end by his migration to Cambridge, on his election to the vacant Chair of Anatomy at that University.

In the thirty-six years that have elapsed since that election, Macalister's activities in the service of his second University and College have been matters of common knowledge to the wide circle of his colleagues, pupils and other friends. During this period also, Macalister's interest in anthropology became more pronounced. His early publications are not numerous and are widely scattered. But it seems fair to claim his critical review of Darwin's *Descent of Man* (on its appearance in 1871) as a mark of the increasing claims of anthropology. And again it was during Macalister's residence at Dublin that he made the gratifying discovery (in Egyptology) of a fragment in Dublin completing an imperfect inscription previously known to exist in a collection at Vienna.

As Humphry's successor at Cambridge, Macalister must have been perforce impressed by the rich collection of human skeletons in the Anatomy School. He lost no time in mere admiration, but he commenced work on the material, and his publications from 1883 onwards reflect his activities in this field. The very extent of the collection offered full scope for Macalister's well-known predilection for the study of variations. Evidence of this tendency has rarely been absent from his anatomical and anthropological writings, and he summarised his conclusions in the Boyle Lecture at Oxford in 1894. Large as the number of specimens might be, he laboured assiduously to increase the size of his collection, with the result that he saw the original total increased fourfold during his tenure of office. What Macalister has published gives but a partial indication of his indefatigable industry, to which a long line of MS. books now bear silent witness in the form of innumerable measurements and notes supplemented by numbers of elaborate drawings.

Macalister was elected a member of the Institute in 1884. He was soon appointed a member of the Council, and in 1893 he succeeded Tylor in the Presidential chair. His address (1894) and that delivered by him as President of Section H (at the Edinburgh meeting of the British Association) in 1892 reveal a characteristic breadth of view. This quality may well have proved a factor in determining his dislike of dogmatism, a dislike which seemed to increase with the lapse of time, so that of late he had published neither opinions on recent momentous discoveries nor criticisms of subjects which are still matters of controversy.

In reference to Egyptology, the long series of Egyptian bones collected mainly by Macalister and representative of several distinct epochs in Egyptian history, calls for special mention, though, as remarked above, many results of his studies have never been published. His published work of an Egyptological and of an archæological nature will be found in the Proceedings of the Society of Biblical Archæology. Cognate subjects he dealt with in articles contributed to Dr. Hastings' *Encyclopædia of Religion and Ethics* and the *Dictionary of the Bible*. These titles themselves serve to recall Macalister's unremitting labours in the cause of

religion. It would be inappropriate to enlarge on this theme here. But even in the briefest sketch a passing reference is claimed by activities and service of which very few realised the full measure.

Lack of space makes it impossible to do more than mention the connexion of Macalister with the *Journal of Anatomy and Physiology* (now the *Journal of Anatomy*). Himself a contributor to the first number of that journal (1867), he was for a time the chief acting editor, and the period in question is marked by the increased size of the journal and the abundance of its illustrations.

Macalister possessed a natural dignity of pose and speech, commanding at once respect and confidence. In any attempt to recall his influence as a teacher, reminders must be added of his admirable accessibility, his marvellous memory for faces and names, his ready sympathy and his unfailing alacrity in probing a technical difficulty to the core. In the minds of students these qualities quickly developed those sentiments of enthusiasm and devotion which constitute not the least significant of memorials. From his side, sympathy extended equally to his colleagues on the teaching staff, who will readily acknowledge an indulgence apt to be carried to quite extraordinary lengths.

Robust in constitution and energetic in temperament, Macalister enjoyed great powers of physical endurance. His celebrated walk from London to Cambridge was accomplished in little more than twelve hours, and (for time and distance at least) was even surpassed on some other occasions. He was a world-wide traveller, sea voyages had no terrors for him, and he had the priceless gift of feeling as comfortable in a small tramp steamer as on the largest liner. Naturally imperturbable, he could rise superior even to the restraints of quarantine in an open Turkish seaport ("I took the opportunity of acquiring the art of sail-making," he said).

Of late years, however, he had undertaken no extended tours, though long pedestrian rambles whether in Dorset or the Isle of Skye still retained their charms. But in the winter of 1917–18 severe attacks of influenza took their toll. They were repeated in February, 1919, convalescence was much prolonged, and a patient of less resolute nature might well have been tempted to abandon work. Macalister struggled on, and resumed his duties for the last fortnight of the Lent Term.

He left Cambridge for Dublin as soon as the vacation arrived. It was hoped that change and a rest would lead to complete recovery, and in fact some improvement seems to have taken place. Two days before the crisis which marked the beginning of the end he wrote from Dublin in terms which indicated good progress. But this was not maintained, and although hope was still justified for some weeks, it became evident that the limit of his strength had at last been reached. The end came on 2nd September 1919.

List of Degrees and Distinctions.

LL.D., Edinburgh, Glasgow and Montreal.
M.A. Cambridge; M.D., 1884.
M.D. Dublin, 1876; D.S.C. (honoris causa), 1892; M.B., 1871; B.A., 1871.
L.R.C.P. Ireland, 1862; L.R.C.S. Ireland, 1861.
L.M. Rotunda Hospital, Dublin, 1862.
F.R.S., 1881 (Council 1894–5); Hon. F.R.S. Edinburgh, 1917.
Fellow of St. John's College, Cambridge.
F.S.A. Member of Senate R.U. Ireland, and University of Dublin.
Member and for some time Secretary of the Royal Irish Academy.
Corresponding Member Soc. Rom. d'Anthropologia.
Do. do. Berliner Anthropologische Gesellschaft.
Do. do. Soc. d'Hist. Nat. de Cherbourg.

PUBLISHED WORKS.

These include an *Introduction to Animal Morphology*, *Morphology of Vertebrate Animals*, *Evolution in Church History*, a *Text-Book of Human Anatomy*, *Memoir of James Macartney*, and contributions to many scientific journals.

W. L. H. DUCKWORTH.

New Mexico: Folklore. Parsons.

Mothers and Children at Zuñi, New Mexico. *By Elsie Clews Parsons.* **86**

In Zuñi girls are more desirable than boys, and it is with reluctance that a man of the household will be summoned to help at childbirth—except in an emergency the men are sent out of the house*—for the presence of a man will turn the unborn girl into a boy. A nap during labour likewise results in a change of sex, making of the boy, a girl, or of the girl, a boy. Movement of the foetus on the right side is a sign of a girl, on the left side, of a boy. Slight pains indicate that a girl is to be born, and the women present will say to the expectant mother, "Don't sleep" or you will have a boy."

During labour a raw bean may be swallowed—just as it slips down with ease the delivery will be easy.† The labour will be hard if, during her pregnancy, the woman has been subject to much cold—the waters in her freeze and "hold the baby back." While the assistant is massaging the abdomen she will feel the top of her patient's head—it will get hot when the time of delivery is at hand. When the placenta is retarded, the woman will be slapped on the lower part of the back with a man's moccasin‡—"a man walks fast about his fields."§

At once after the birth, a boy is sprinkled on the penis with cold water that the parts may be small, and a girl has placed over the vulva a gourd cup, that the parts may be large. These requirements in physical proportion are distinctively feminine, as men will say to women, "Why do you want us small and yourselves large?" After the baby's hot cedar bath he or she will be rubbed all over with ashes to keep the body depilous for life. Hair on body or face is disliked. Not infrequently when a man is talking to you he will be tweaking out hairs from his face with the square inch of metal tweezers he carries about for that service.

* Parsons, E. C.: "Zuñi Conception and Pregnancy Beliefs," p. 380. *Proc. 19th Inter. Congress of Americanists*, Washington, D.C., 1915. The phallic shrine for girl babies mentioned in this account is called *tepikwe* (vulva). The stone within, *aslan*, is not only scraped for would-be mothers to drink, but it is touched by one who wants a wife.

† This practice appears to be unknown at Laguna. There, at the onset of labour, a midwife will put a badger claw into the woman's belt. The motive was obscure to my informant, but I suspect it is because the badger is "good at digging his way out," a reason I have heard advanced by Keresans for badger service in other ceremonial connections. (*Cp.* "Franciscan Fathers," *An Ethnologic Dictionary of the Navajo Language*, p. 418, St. Michael's, Arizona, 1910.) On the other hand, the badger may be thought to have some responsibility for labour pains, and therefore to be good medicine against them.

‡ There is the same practice at Laguna. Again, at Laguna, in case of retardation, the tip of a deer's horn may be ground fine, mixed with water and drunk—the deer's horn is strong, it pulls asunder. The placenta is sacred (*tsitya*), and so it is not thrown out indifferently, but buried near the river, where it will be washed away, the customary disposal of sacrosanct discards. Were it treated less carefully, ill-health would befall the woman. The cord is buried under the house floor, near the grinding stones, in case of a girl, in the middle of a field, in case of a boy, with the intent to attract the child either to grinding or to field work. At Zuñi something which is called *suuke* (certain cave dwelling bogeys) *shomi* (nail, claw), is found by a man of the household and applied to the severed cord to make it heal quickly.

§ Incidentally I may note that the dye will come off men's moccasins if a pregnant woman sees them in the making. In like circumstances black spots will come out on bowls in firing.

During eight days* the mother lies in on a three-inch bed of hot sand, quilt or blanket over the sand. A like bed is made for the baby. A box is placed back of his head to hold the cover off his face. Before placing the box it is rapped smartly on the ground, rapped north, west, south, and east, that thereafter the child may be inattentive to noises—an instance of the inoculative magic to which the Zuñi are much addicted.† The head of the baby is to the west.‡ It is important for the mother to lie on her stomach; should she lie on her back the milk would sink back into her body. It is important, too, for her to keep drinking hot cedar brew, "that all the blood will come out," and none be left "to make another baby." A baby thus made would be small and sickly. For the same reason there is a rule or disinclination against having intercourse until the flow has ceased.

The mother's hot drinks have been prepared by the baby's paternal grandmother, his *wowo*. She, too, has kept the sand-bed hot, as well as the stone pressed to the mother's abdomen, and she has given the baby a daily bath. In return for these services *an wowo* will receive meat and bread and *he'paluke*, wheat meal cooked in corn husk. On the morning of the eighth day, before sunrise, *an wowo* comes to take mother and child outdoors to present the child to the sun. The grandmother sprinkles meal on the ground and prays:—

Yatokya litla hon yam tsapkunan illikwaikya to' onaayaky'ana
Sun here we your baby (prayer word) *take out you road finished*
utenanaishiaky'ana.
good things get.

After this rite, after the baby has flown out like a fledgling from its nest, people say, the baby is put for the first time on his board cradle. In this cradle, near where the heart of the baby would be, a little hole is made and filled with piñon gum, and a bit of turquoise inlaid.§ This is to give a heart to the cradle, "to make it come alive" (*tememikyaneaiye*=board, give heart), and to preclude it from bringing any harm to its tenant.‖ If a baby dies, its cradle is burned;¶ were it used for another child, the child would die.

A baby runs great risk if it is left in a room alone. Some family ghost whose

* The customary period in different families is not uniform. A confinement of four days, I was once told, was copied from the Navajo. The ceremonial confinement of the *chakwena okya* (woman), a masked impersonation, is eight days. "We do as the *chakwena okya*," said one informant, "to "save our babies."

† *Cp.* Parsons, E. C.: "Zuñi Inoculative Magic."—*Science*, N.S., XLIV (1916), pp. 469–70. *For* a like point of view in a Plains tribe, *see* Kroeber, A. L., "The Arapaho"—*Bull. Amer. Mus. Nat. Hist.*, XVIII (1907), p. 451.

‡ The position of the dead is head to the east, and none would think of sleeping in that position.

§ In one cradle I have seen there were two turquoise insets, one on either side of the neck rest of the cradle. This cradle had been made by the father's people, since, contrary to the more common usage, the mother was living with them.

‖ Turquoise is laid in the foundations of a new house, and, I surmise, from much the same point of view. At Laguna to-day turquoise is not set into the cradle, but the reference to turquoise in the lullaby printed in MAN, 1919, 18, suggests that turquoise was once used as at Zuñi, or among the Navaho. (*An Ethnologic Dictionary of the Navaho Language*, p. 470.) Wood struck by lightning should be used for the cradle that the baby may grow. Lightning is *hokkwani*, possessed of supernatural powers. A little bag containing corn pollen and four grains of corn, the heart of the child, is tied to the heart side, *i.e.*, left side of the board cradle. The four grains have been taken from the ear of corn that has lain alongside the infant the first four days of his life. The rest of the corn is planted that the child may grow with the corn. In curing, the patient's heart is also represented by, or rather identified with, four grains of corn.

¶ Among the Apache a dead baby is uncradled, and baby and cradle are hung on a tree. Personal communication from Dr. P. E. Goddard. (*Cp. An Ethnologic Dictionary of the Navaho Language*, p. 472.)

heart is in the house will return and hold the baby, and in four days the baby will die. I was told the story of just such an occurrence. Recently a woman who had left her baby alone re-entered the room, and the baby was nowhere to be seen. She searched everywhere in vain. She went to inquire of neighbours. On her return she found the baby where she had left it. In four days the baby died. If a baby has to be left alone, an ear of corn, the kind of ear which is flattened and quasi-branching at the tip,* should be left alongside.

If a baby has a rash, it is due to the fact that before his birth his mother tested the heat of her own oven by sprinkling bran in it. To cure the rash, the mother will soak some bran in water and rub it over the baby. Sores on a baby may be due to his mother stepping before his birth on an anthill. To cure *kalonaiye* (ants on body), the mother will carry the child four times across an anthill—as usual in Zuñi thought, like cures like. But if this treatment fail, a medicine-man from the Ant Society will be invited to the child's home. There for four nights he will set up a ground altar and engage in the rite of brushing the ants out of the patient's body into the circle of meal on the altar. In one case described to me the brush (*pepe*) was seen to be full of pebbles and ants, and the baby did indeed recover.

DIAGRAM OF ALTAR OF MEDICINE-MAN OF ANT SOCIETY.

a = *mi'le*, corn ear fetish;

b = medicine bowl into which *c* is dropped and out of which all present are given a drink at close of ceremony;

c = *shiwaki*, old stone, fetish which looked into reveals cause of sickness;

d = circle of meal into which ants are brushed and out of which they will not move.

In another instance I heard of, the baby's sores looked like the spots of paint on the mask his mother in her pregnancy had seen worn by his father. To cure the baby they put paint on it, and at the same time on the mask. Disfigurement in the baby may be caused before his birth by his father taking part in a masked dance. The mask is said to be copied (*teliyashkya*) in the baby. Then the father will put on his mask and dance, and sweat from his body will be rubbed on the baby.† Sweat from a horse will be rubbed on a baby if it cries as if in pain, for the pain may have been caused by the father beating his horses. If the baby cries a great deal, it is because his father sang a great deal before he was born, and for such crying there is no remedy. One day we had for dinner an unexpected mutton stew. "A man sent me a sheep which he said he owed me," explained our hostess. "I had forgotten about it. Last summer his baby was very sick, and they thought it might be because the father‡ had got drunk before the baby was born.

* The ear of corn which splits in two toward the top (*wi'kyapona*, corn, flat) is thought of as a mother and child. It is kept in the corn store room, in some cases together with a lump of salt (*nakyapona*). When salt is dug from the Salt Lake the hole soon fills up. The lump of salt is kept in the corn store, so that whatever corn is removed will be made good. For like reason a lump is kept at the bottom of the bread bowl. A lump of salt may also be left alongside the baby.

† For analogous explanations of deformity, *see Zuñi Conception and Pregnancy Beliefs* pp. 888–8.

‡ The mother as well as the father may have been the cause of sickness. Both parents will try out remedies. A successful remedy is proof of the cause of the sickness.

" So they wanted to rub some whiskey on the baby. I happened to have a bottle " of Virginia Dare wine and I gave it to them." The baby had died.*

This baby, like others, died unnamed. Not until a child is creeping about does it get a name. They put off the naming until there is comparative certainty of living, for should a baby have a name and die, they would recall the name, and "it would make them feel worse." The child will be named by some senior in the family—named, perhaps, for a relative long since dead. They would not give the name of a living person or of one recently dead about whom "they still feel bad." In this instance, as in others, it is plain that after the set mourning of four days the dead are put out of mind as thoroughly as possible.

The baby that has been born at full moon has a good prospect of health and long life; born on the new moon or on the waning moon his prospects are poor. The time for initiation into the secret societies is set in January and February at the full moons, because being initiated is like being born—a point of view familiar in other communities.

If a woman has had a hard time in raising her children, she will ask a *shiwanni* (so-called rain priest) to name a child. The *shiwanni* (in case of a boy a man *shiwanni*, in case of a girl a woman *shiwanni*) will come to the child's house and put a little water on the child's forehead. The rite is referred to as *mito'u*, a term for putting anything on the forehead. There can be little doubt that this rite has been borrowed from the *tatatsi*, the Catholic priest, by the *ashiwanni*.† In the characteristically Pueblo rite of washing, the whole head is washed. According to an aged woman informant, people stopped going to the church for baptism some decades ago. Once a woman had lain down in the church contrary to the order of the bow-priests, those strict guardians of the proprieties even when borrowed, and nursed her baby. Four days later mother and baby died. This so frightened the people that they stopped going to church.

An unfortunate mother has still other resources. She will ask to have the *santu* brought out, *i.e.*, transferred from the inner room in the house of its sacristan to the front room, and candles will be lit and prayers said. The woman will *santu yechu*—breathe in from the *santu*, *i.e.*, she will draw a breath four times from her own clasped hands while feeling she is acquiring virtue from the saint. *Yechu* is a rite of virtue getting or fortune getting practised in connection with any fetich or object possessed of fetichistic quality.

Again, to ensure success with the coming child a woman may be given a *wiha* (baby) or doll made up as a *koko* or masked impersonation. She will receive it from a *koko* during a dance.‡ After the birth of the child the *wiha* is referred to as the "heart" of the child, and for neither love nor money will the mother part

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* In this household there had been three deaths within a few months, two girl babies and a thirteen-year-old girl. Several causes were considered. A few months before there had been a lunar eclipse—"the moon died"—and many deaths among females had followed. A few years before, the house had been one of the houses of entertainment during the *koko awia* ceremonial. It was suggested that one of the god impersonations might have been a witch. Witch malignities of more recent date were also considered. A corn-ear fetich (*mi'le*) hanging up in its bag had fallen and broken a ceremonial bowl below. This was interpreted as an omen (*teliuna*) of the misfortunes that followed.

† A Catholic baptismal rite is used in curing a child with dysentery among the *Pima*. (Russell, F.: "The Pima Indians," pp. 266–7, xxvi (1905) *Ann. Rep. Bur. Amer. Ethnol.*

‡ Father Dumarest describes a like practice in connection with would-be mothers among the Keresans of Cochiti. (MS. to be published as a Memoir of the American Anthropological Association in 1919). *Cp.* to the ear of corn given to a would-be mother by the *shuhuwa ohya*. (Parsons, E.C.: "Notes on Zuñi," II, 179—*Mem. Amer. Anthr. Assn.*, Vol. IV, No. 4, 1917).

with this *wiha*.* It is a kind of life token.† Were it disposed of, "the child it "had brought would die."

Analogously, a woman who has received prayer-sticks from a *shiwanni* to plant at the phallic shrine on *towa yallone*‡ and who thereby gets a child will show attentions to the given *shiwanni* lest her child die. I heard of one such mother who was accustomed to bring food to the *ashiwanni* of the South during their eight-day summer retreat to call the rain. As if she were a member of a *shiwanni* household, during the retreat this woman devotee did not trade. In another case I heard of, because the woman failed to go on with her gifts to the *ashiwanni*, to whose altar in the winter solstice ceremonial she had brought the clay image of a baby, she did not succeed in getting a child.

Another success bringing method is to invite to be present at the birth a woman who has had many children and lost none.§ She will be the first to pick up the new-born, and she will blow into his mouth (*pu'nna*). In case of a boy, her husband or some man in her house‖ will become the boy's initiator or ceremonial father in the *kotikyanne* or god society into which all the boys are initiated.¶ Ordinarily a boy's father chooses a man in the household of his *kuku*, his paternal aunt, to become his son's ceremonial father.**

The development of the child is promoted in several particulars. That he may keep well and walk early, hairs from a deer are burned and the baby held over the smoke—deer are never sick, and rapid in their gait. Their hearing, too, is acute, so discharge from a deer's ear will be put into the baby's ear. That he may teeth quickly, his gums are rubbed by one who has been bitten by a snake. The snake-bitten will also rub the gums if, after the teeth have erupted, the child tries to bite everything. "Snakes want to bite"—once more inoculative magic.

That a child may talk well and with tongues, the tongue of a snared mocking-bird may be cut out and held to the baby to lick. The bird will then be released in order that, as it regains its tongue and "talks," the child will talk. To the brother of my informant mocking-bird tongue had been thus applied, and to-day the youth speaks, in addition to his native language, Keresan, English, and Spanish.

To make a child's hair grow long and thick, his grandfather or uncle may puff the smoke of native tobacco on his head.†† Hair cuttings are burned. Were they thrown out, the winds would scatter the hairs and with them the life and fortune

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* *Wiha* given to the children themselves by the *kuku* are less precious. They are of the same type as the *iwaak* of Laguna, the female, boardlike, the male, a rounded block. See "Mothers and Children at Laguna, New Mexico."

† The life token representation appears again in the *mi'li*, the feather-girt ear of corn acquired by members of the curing orders. "A person lives as long as his *mi'li* wants him to live," and at death the *mi'li* is buried, the corn planted, and the feathers made into a prayer stick.

‡ *Zuñi Conception and Pregnancy Beliefs*, p. 379.

§ The same practice is followed at Laguna.

‖ In one case of which I heard, it was her son-in-law. Her daughter took the child to be baptized by the *tutavi* in the house of the *saaku*, *i.e.*, became his godmother—as interesting an instance of how Zuñi pattern imposes itself upon foreign custom as any I know, a native fertility birth practice combining with a Catholic rite.

¶ The boys are taken in at the quadrennial initiation between the years of six and ten. The bow-priests oppose the complete initiation of the very young because of the ceremonial improprieties they may commit. Once a little boy dancer came out with his mask raised from his face, and, as usual in case of ceremonial mishaps, all the people had to be cleansed by whipping by the *sayathlia*, exorcising masks.

** This practice is in accordance with the general Zuñi theory that ceremonial functions devolve upon the father's people. Stevenson has mistaken the particular practice, or as much of it as she was told about, I surmise, *for* the general practice.

†† At Laguna willow twigs are twisted up and put in the water to wash the hair, that the hair may be long like the willows.

of their producer.* Besides, witches work ill through air. At the *koko awia (shalako)* ceremonial, when many Navajo guests are at hand, hair brushes are scrupulously hidden away. If a baby keeps his fists tight, they are not prised open to wash, because the dirt he holds is said to be good life and good fortune; the baby who keeps his palms open will be without fortune.

The first time a baby is taken out at night, embers moistened with water are rubbed over his heart that he may not be afraid in the dark. Similarly, dampened embers are rubbed over a child's heart when he wakes up from a nightmare, and water with embers in it is given to him to drink. The first time a baby is taken any distance from home his mother would turn her head soon after she had left the house and, as if the baby were not in her arms but behind in the road, she would call out, "Come, you are the last behind there, but come, don't cry." Thereafter, on leaving home, the baby will not cry.† The first time a member of the household puts the baby on her back to carry him the baby is whipped. In the novel position he is whipped four times, whipped on his buttocks with a bit of yucca. This measure will keep the baby from crying thereafter on being carried. My informant remembered how her mother had said to her when she first picked up a baby sister to carry on her back, "Wait, stand still," and had gone to get the yucca switch.

In washing a baby's clothes, much care is taken not to drop any garment—the child would have a bad fall. For this reason the clothes would not be hung on a line.

When a drooling baby coughs, his grandmother (*an mowa*)‡ is said to be saying something to give him; she is said to be talking about him when he sneezes.§

ELSIE CLEWS PARSONS.

Nigerian Notes. Thomas.

(III) Twins. *By N. W. Thomas.* 87

Over the greater part of the old Central Province of Southern Nigeria twins are held in abhorrence; in other parts of West Africa, notably Sierra Leone, they are regarded as lucky; but at present our information is too fragmentary to permit of any theorising as to the meaning of these contrasted attitudes.

In the Edo areas, where the Ovia society prevails, twins are killed, and until this is done no one in the village may make a fire or eat. The mother must lament, and no one will wash the children or attend to them; if food is being cooked, the women are not allowed to eat it. In a family that forbids twins, the husband may not see the children, nor yet the mother; old women of the family, according to one account, take the children away, after blindfolding the mother, and suffocate them; blood may not be shed. The ground is purified with the sacrifice of sheep, dogs, and goats for Ovia; the mother is purified with chickens and *owe*, and a decoction of *afo* is put on her body. When a woman shows signs of bearing twins, women go and tell her husband, who tells other children of Ovia; all the women run away, and only Ovia people come to the house; they close the door, drive boys away, blindfold the women, and sometimes take away the child.

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* *Cp.* "Mothers and Children at Laguna, New Mexico," MAN, 1919, 18.

† Is this practice Spanish? Curiously enough the same practice is followed by the negroes of the Sea Islands of South Carolina.

‡ *Cp.* Parsons, E. C.: "Notes on Ceremonialism at Laguna." To be published in Vol. XIX. of *Papers of the American Museum of Natural History*. The substitution at Zuñi of the baby's grandmother for mother *iyatik*, the earth supernatural of Laguna, is of interest. The latter, *awitelin tsita*, earth mother as she is called at Zuñi, has a much more esoteric or distant position at Zuñi than at Laguna.

§ Similarly, if an adult sneezes, someone is talking about him. If he sneezes at night, it is a ghost talking about him. "Last night my husband sneezed," said my informant, "he thought it was a dead sweetheart talking, and he said to her, 'Wait until that little mouse gets a long tail, then I will go to see you.'"

In Usen twins are also forbidden, but not for Ovia. The woman sacrifices to her husband's father, and the father does the same to his ancestors. A woman who has borne twins cannot enter the town for three months; she shaves her head before coming back; if she bears the twins in the town, her husband may not eat food there. The husband has to pay money for purifying the town, which is done in the way already described. A decoction of *afo* is taken and put upon the children's bodies.

The account given of the origin of twins is as follows: Osa gives a man so and so many children; if one dies, it is born again. *Eki* leads a child into the world and it is in Elimi till it comes. If two children play together before they are born, one *eki* follows the other, and twins are born.

If twins come in a family that does not forbid them, whatever is given to the elder must also be given to the younger, or one of them will die.

Twins are occasionally of different sexes, and this is a sign that the woman will bear twins again, for males and females must come in pairs. For one reason or another, however, twins appear comparatively seldom in the genealogies, but they appear to be not uncommon. In a village near Idomowina, one woman bore twins twice; the first pair died, whether from natural causes or otherwise I was unable to determine.

When twins are born in Ugo a woman is sent to another country till they grow up. If twins die, the father gets a sheep and cock and cuts palm leaf, and two messengers go round the town and put them down on the boundary of a road. They take *afo* round the town and all the women come out, put cowries in the calabash of *afo*, and rub themselves with *afo*. If the children live there is no custom.

At Sabongida the elder is called "Odion," the younger "Omo"; they are considered lucky.

Twins are considered lucky at Ako, Idua, Ima, Ubiaja, and Usaitai.

At Okwoloho at the mention of twins people put their hands on their ears and spit. If a woman bears twins she is sent into the bush for fourteen days; then the head man of the town sacrifices a goat and a dog, and the woman brings one child back, having "lost" the other one. Cowries are given to the child when its first tooth appears.

At Kokori if twins are born, one is thrown away in the bush and the woman goes to another village.

N. W. THOMAS.

REVIEWS.

Ethnography. Nordenskiöld.

Vergleichende Ethnographische Forschungen. I. Eine geographische und Ethnographische Analyse der materiellen Kultur zweier Indianerstämme in el Gran Chaco (Südamerika). By Erland Nordenskiöld. Göteborg: Elanders Boktryckeri A.-B. 1918. **88**

Published in Sweden, and by a Swedish author, but printed in German, this appears to be the first volume of a series of comparative ethnographical researches. It relates primarily to the Choroti and Ashluslay, two tribes of the Gran Chaco, a district extending from the Argentine Republic northward across a corner of Paraguay into Bolivia. Its intention is to trace the various objects of the material culture of the tribes in question, with the view of ascertaining their provenience and the history of the cultural influences which have from time to time overspread and left permanent results on the aboriginal peoples of South America. The method chosen is to mark on a copy of the map of the continent the tribes among which each several item is a part of their living culture and the places in which archæological investigation has found specimens attesting its former prevalence. The author, who has himself travelled in South America, relies in the first place on his

own observations. He has also consulted all records of travel available, and beyond that has examined the collections of material in the various Swedish museums, and has corresponded on the subject with anthropologists in Denmark, Holland and Germany. The result is a work that, whatever may be its shortcomings, such as he modestly hints at, cannot fail to be of great value to all who are interested in the history of culture.

After a careful and detailed examination, the author comes to the conclusion that these tribes have received but little from Europeans, beside the domestic animals introduced by them in the New World. Their own native culture was poor in the extreme. They have been subjected to certain influences from the north and the south of the continent. But by far the deepest impression made upon them was by those which came to them from the west over the Andes, and chiefly from the kingdom of the Incas, the great focus of culture in pre-Columbian times.

The author is severe on English inquirers who simply do not trouble themselves about what has been written on South America in other tongues than their own, and on the untrustworthiness of the Hakluyt Society's translations. His remarks on the adoption of new elements of culture and on the part played by women captured from other tribes are specially valuable.

An English translation is now (1919) published, and a copy has been kindly presented to the Institute. In a short Preface the author states that "opportunity has "been taken to correct a few mistakes, and to add a few additional notes"; otherwise it is practically identical with the original. E. SIDNEY HARTLAND.

India. Barbosa: Dames.

The Book of Duarte Barbosa: An Account of the Countries Bordering on the Indian Ocean and their Inhabitants. Written by Duarte Barbosa, and completed about the year 1518 A.D. Edited by Manael Longworth Dames, I.C.S. (retired). Vol. I: *Including the Coasts of East Africa, Arabia, Persia, and Western India as Far as the Kingdom of Vijayanagar.* London: Hakluyt Society. 1918. **89**

Duarte Barbosa's account of his travels is a work of great importance, because the author was not a casual traveller. He lived in Southern India between 1500 and 1516, was acquainted with the country and its people, learned their language, and was a careful and competent observer. The original translation of this work, by Lord Stanley, issued by the Hakluyt Society in 1865, was made from a Spanish version, and as regards annotation and comment was admittedly incomplete. Mr. Longworth Dames, who has retranslated it from the more correct Portuguese text of 1813, is an excellent Portuguese, Arabic, and Persian scholar, and his wide knowledge of the contemporary Portuguese literature, and of the history, topography, and peoples of India and the shores of the Arabian Sea has enabled him to supply a commentary which is both interesting and instructive. To the historian and ethnologist the book is of the highest value, because it records the experiences of a learned and competent observer at an exceptionally interesting period of the relations between India and the western races. Mr. Longworth Dames has devoted much patient research to the identification of the many ports and cities visited by the author. This was a task of peculiar difficulty, because during the four centuries which have passed since Barbosa wrote, the sea coast has been subject to many changes owing to the alluvial deposits left by the great rivers like the Indus and Nerbudda. Many of the early ports have become silted up, and the original names have been lost. It is possible that a thorough examination of the editor's identifications by someone possessing special knowledge of the western coast of India may lead to some corrections. But, at any rate, a firm basis has been laid for the work of some future geographer.

The ethnologist will find information on many questions of interest—female circumcision and physical methods for securing continence in girls; the branding of children; the Amazons of Sokotra; the tribes and castes of Gujarāt and the Konkan; the treatment of women; the clash of western and eastern cultures. The questions on which I venture, with much hesitation, to dissent from the editor's conclusions, are few and comparatively unimportant. Barbosa (Vol. I, p. 117) speaks of "men of low degree who act as messengers and go safely everywhere without "molestation from any, even during war or from highwaymen; these men they call "*Patelles*." It is suggested that the name represents Patēl, a Marāṭhī term applied in Western India to the headman of a village. But, so far as I am aware, these patēls never claimed or enjoyed the immunity of which Barbosa speaks. The reference seems to be to the tribe of bards known as Bhāt or Chāran, who acted as guardians of convoys of merchandise or treasure, were *quasi*-sacrosanct, and were ready to risk their lives in defence of the property committed to their charge. If they lost their lives their ghosts were believed to haunt the murderers, and they were thus protected by a very effective sanction. In the immediate context Barbosa speaks of the *Brasones* or Brāhmans, and there is a class of Brāhmans known as Bhātela in Rewa Kāntha, on the west coast. Possibly the term *Patelles* used by Barbosa is the result of a confusion between Bhāts and Bhātela Brāhmans. The author, again, describes his visit to the city of *Patancay*, clearly Pātan Somnāth. The editor interprets *Patancay* as *Patna Isha*, "Lord's Port." This would be an unusual form, and Sir James Campbell's explanation (*Bombay Gazetteer*, VIII, 608) that the original term is Patan Śrī, a well-known name of the place, seems preferable. *Śrī* means "wealth" or "good-luck," and as an adjective is a cult title of Lakshmī, the goddess of prosperity. The title thus means "the lucky" or "fortunate" city. In the same way, the name of the port of Diu, *Deviza*, used by Barbosa, represents, not *Devisha*, "lord or consort of the goddess Devī," but *Dwipa Śrī*, "the isle of good fortune."

These are small points, and his successful accomplishment of a difficult task reflects much credit upon the scholarship and industry of Mr. Longworth Dames. In his second volume he will pass to more interesting ground, the country and people of southern India, of which Barbosa records much valuable information. All students of India and its races will eagerly look forward to the completion of the work.

W. CROOKE.

ANTHROPOLOGICAL NOTE.

Accessions to the Library of the Royal Anthropological Institute. 90

(Donor indicated in parentheses.)

An Ethno-Geographical Analysis of the Material Culture of Two Indians in the Gran Chaco. By Erland Nordenskiöld. 293 pp. Many maps and illustrations. Göteborg Elanders Boktryckeri Artiebolag Göteborg.

Animism. By G. W. Gilmore. 7½ × 5½. 250 pp. Marshall Jones Co. $1.75. (The Publishers.)

Negro Population in the United States, 1790–1915. By Dr. John Cummings. 12 × 9½. 840 pp. Government Printing Office. (Bureau of the Census.)

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Madras District Gazetteers, Salem. By F. J. Richards, I.C.S. 2 vols. 10 × 6. 328 and 305 pp. Government Press, Madras. 5s. 3d. and 9s. net. (The author.)

Eyre and Spottiswoode, Ltd., His Majesty's Printers, East Harding Street, London, E.C. 4.

FIG. 1.—FRONT VIEW OF A "HAVI" AT HAIPUA.

FIG. 3.—INTERIOR VIEW OF A "HAVI," HAIPUA.

FIG. 2.—CEREMONIAL DRUMS SUSPENDED IN FRONT OF A SKULL SHRINE IN A "HAVI" AT KAIRU, A KORIKI VILLAGE, NAMAU.

FIG. 4.—"KOPIRAVI" IN KAIPIRIA "HAVI," HAIPUA.

FIG. 5.—"KOPIRAVI" FROM OTARAVI.

THE KOPIRAVI CULT OF THE NAMAU, PAPUA.

ORIGINAL ARTICLES.

With Plate M.

Gulf of Papua: Ethnography. Haddon.

The Kopiravi Cult of the Namau, Papua. *By A. C. Haddon.*

91

The Namau inhabit the Purari delta from Era bay to the Aleie mouth of the Purari; to the east are the Elema tribes (J. H. Holmes, *Journ. Roy. Anthr. Inst.*, XXXII, 1902, pp. 418, 426; XXXIII, 1903, p. 125; Man, 1905, 2), and to the west are the Urama (about whom practically nothing is known), and beyond them are the Koiawa (Haddon, Man, 1918, 99). Their culture as a whole is so similar to that of the Elema tribes that there can be no doubt as to their common origin, but the *kopiravi* cult is peculiar to the Namau, and is so distinctive as to separate the two groups.*

The most prominent features of the villages of the Purari delta, in the Gulf of Papua, are the great ceremonial houses, *rawi*, of the men, which are tabued to women, except, it has been stated, on special occasions, but this requires confirmation. These enormous structures range in length from about 150 to 200 ft., and are supported by an immense number of piles 5 to 8 ft. in height. The roof rises gradually from behind forwards, but more rapidly at the front end, where it forms a high-peaked projecting gable, the apex of which may be as high as 80 ft. above the ground. The roof is supported by a double series of central posts; other posts support its lateral portions. The eves overhang the low side walls. The back gable-end is walled, but the front one is open, except when ceremonies are in progress or being prepared for, in which case a high temporary screen is erected in front of the porch. There is a small platform in front of the building, and a long narrow one usually extends in front of this. The front gable is generally decorated with fringes of sago-palm leaves, and long fringes of the same, depending from the roof, adorn the interior. The floor is a poor construction of more or less flattened slabs of palm-bark laid across the longitudinal beams; a central gangway of boards, usually the sides of broken canoes, leads down the length of the building between the paired central posts. These boards, in addition to the characteristic carving on the upper border of the hull of the canoe, are decorated with incised designs of highly-conventionalised pigs, crocodiles, men, etc., and also of human footprints. Chalmers describes this passage as being "carpeted with the "outer skin of the sago palm, glazed by the blood of the victims so frequently "dragged over it and by the constant walking on it" (p. 60).

Immediately on entering the *rawi* one sees a number of beautifully-carved wooden drums hanging from a pole. Down each side are a number of courts with fire-places, beside which the men sleep; they are separated by light screens of poles and cross bars, on the front of which are tied several carved and painted tablets, *koe*. These usually are pointed oval boards, one side of which is carved to represent a conventionalised human face and other designs, no two being alike; occasionally carved human figures also occur. Only once have I seen a shield on one of these shrines, but doubtless they were formerly quite common. Masks are frequent, especially at the times of ceremonies. In front of the *koe* is a heap of skulls of wild pigs, turtles, and crocodiles, and also, only a short time ago, the skulls of those victims who had been killed and eaten; but in the settled districts no

* The best accounts of the Namau are given by J. Chalmers (*Pioneering in New Guinea*, 1887, pp. 58-70), he visited the area in 1884; and by J. H. P. Murray (*Papua or British New Guinea*, 1912, pp. 176-84), the only published illustration of a *kopiravi* is that given on the plate facing p. 219. A considerable amount of general information is to be found in the *Annual Reports* on British New Guinea.

human skulls are allowed by the Government to be exhibited in a *rorí*. Chalmers says: "When all is in order they [human skulls] are hung on pegs all round; no "scientific collection could be better kept. I fancy each man who has killed or "helped to kill a foe has his peculiar painting and carving on the skull" (p. 61). It is stated that the skulls of relatives are kept in the private houses.

The vast dimly-lighted interior of a *rorí* is extremely impressive, streamers depend from the gradually lowering roof, and on either hand are the tablets and masks, gaily painted in red, black, and white. Near the far end is a screen, some 4 or 5 ft. in height; it is covered with a fringe of split sago leaves, and attached to it are small netted bags, bark-cloth, perineal bands of men, belts, and the very scanty fore and aft fringes that constitute the sole clothing of the women; these are trophies of victims.

On peering over the screen into the gloomy "holy of holies" (*maiavadi*) is to be seen a double row, up to ten or a dozen, of large, hollow, basketwork monsters, (*kopiravi*), with wide gaping jaws and four wooden legs, their form varying somewhat in different villages. Behind the jaws is a transverse vertical headdress decorated with white feathers, and a similar crest runs down the back. Bull-roarers are laid beneath some of them. Each *kopiravi*, or *kai-io-imauna* (sky *imauna*) has its name, and is in the particular charge of a special man; they are never taken out of the *rorí* and no native woman is ever allowed to see them (*Ann. Rep.*, Papua, 1910, p. 24).

Chalmers says that offerings of pearl-shells, arm-shells, pigs, human beings and skulls are given to the *kaviboa*, as he terms them. "The sick apply to them "for healing, their friends presenting gifts. When wishing to fight, they appeal "for direction and help to these wicker images; and they assured me they got the "former audibly from the mouths, and the latter in success. For days before fighting "all the men are sacred, and no woman must be seen or approached; and when one "of their number is wounded, he is accused of breaking through the sacredness" (p. 66).

Murray records that, before going out to kill anyone, the men consult the invisible spirit of a *kopiravi*; it comes out of the *rorí* and causes the canoe to rock if the expedition is to be successful. On one occasion the bodies were left in the canoe till morning; they were then taken to the platform outside the *rorí*, singed and cut up into small pieces, mixed with lumps of sago, cooked, wrapped in leaves of nipa-palm, and distributed (p. 179).

Women and children may eat human flesh. A man may not eat a person whom he has killed, but a homicide may get his daughter to boil the victim's heart, and he may drink the water and eat a little of the heart provided he is at the same time sitting on a coconut, with a coconut under each heel. Murray also records that his informant, a homicide, went in the evening with a torch in his hand, called out the names of the *kopiravi*, and threw the torch on the ground; any of the village people could then have connection with his wife; he sleeps in the *rorí* (pp. 180, 181).

I was informed by H. C. Cardew that the dead bodies of victims are thrust inside the *kopivari* and left there all night, while the men danced in the front part of the *rorí*; no one went to the end where the *kopiravi* were, as they were afraid. Next morning the bodies were brought out and the genitalia of both sexes were cut off, dropped through the floor into the mud below the building, and stamped into the ground with poles. The bodies were cut up with bull-roarers, cooked, and eaten. The brain, stomach, and other viscera, and the main blood vessels, were not eaten, but thrown away.

A human victim, a cassowary, and a pig have to be sacrificed when a war canoe is completed, and probably human beings are sacrificed when a *ravi* is built.

The Rev. J. H. Holmes informed me that each *ravi* belongs to a group, and is named after the ancient founder. The head of a group has control over the *ravi* and over the dwelling-houses (*mares*) of that group. The *ravi* is the men's house. All the wives and children of a man live in one *mares*; the husband sometimes sleeps there; this is now becoming more frequent. The right and left central poles, perhaps only the first ones, are respectively male and female. Totemism exists, but is now breaking up; the crocodile is a tribal "totem," and besides there are group "totems" and family or clan "totems." According to him, the conception of *iauau* ("the life principle") runs through all their religion. Masks are *imauau*, the *koe* seem to be personal *imauau*; they are probably ancestral tablets, or, at all events, representations of dead relatives. If the bull-roarers, *imauau eiki* (crying *imauau*), represent ancestral ghosts, the tablets may be (as I suggested long ago) hypertrophied bull-roarers and I have seen every gradation between them as to size, form, and decoration.

The religion of the Naman seems to be a combination of totemism, head-hunting, cannibalism, and a manes- or ancestor-cult, associated with which are ceremonial tablets, masks, and bull-roarers; the *kopiravi* may prove to be effigies of spirits who may be regarded as gods.

It is obvious that this brief account of the *kopiravi* cult of the Naman is very imperfect, and it is to be hoped that the Rev. J. H. Holmes will give us a full and authoritative account of it, which he is so competent to do, having spent the best years of his life in the district.

The photographs were taken by my daughter Kathleen (now Mrs. Rishbeth), and we have to thank the Trustees of the Percy Sladen Memorial Fund for enabling us to visit this district.

A. C. HADDON.

DESCRIPTION OF PLATE M.

Fig. 1.—Front view of a *ravi* at Maipua. A temporary screen has been erected in front of the *ravi*, above which can be seen four masks (*imauau kevaka*) with coronets of the black and white tail feathers of the hornbill (*binam*). They were attached to the ends of bamboo poles about 30 feet in length, which were ornamented with croton leaves and the feathers of the cassowary, parrots, etc. They were kept in continual motion for four days and nights by young men, with the object, as we were told, of driving evil spirits out of the *ravi*, or preventing them from entering, as a preparation for other ceremonies (October, 1914).

Fig. 2.—Ceremonial drums suspended in front of a skull shrine in a *ravi* at Kairu, a Koriki village, Naman. The upper right-hand *koe* is now in the Cambridge Museum, the "star" was called *auparia* and was said to represent a "fish."

Fig. 3.—Interior view of a *ravi*, Maipua, showing masks, ceremonial tablets, shrines, and the screen in front of the *maisaki*.

Fig. 4.—*Kopiravi* in Kairimai *ravi*, Maipua. A number of bullroarers can be seen lying on the floor in front of a *kopiravi*.

Fig. 5.—*Kopiravi* from Ukiaravi, a Koriki village. Photographed at Port Moresby (*cf. Ann. Rep.*, Papua 1908, p. 33).

Nigerian Notes.

IV. Astronomy.

By N. W. Thomas.

Thomas.

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(*a*) STARS.

Dwellers in towns and the people of a forest zone are naturally incurious about the stars, for they have no need of them; and we need hardly feel surprise that the

negro has few names for heavenly bodies; sun, moon, morning or evening star, and Orion are usually recognised; Jupiter, the Pleiades, are commonly known; the Milky Way, the Hyades, and another constellation, named but not identified, complete the list.

In Benin City Orion is called Ago; he is a hunter with three dogs, of whom a folk tale is told.

He is said to have a red hand because he cut it; this refers to the colour of the two shoulder stars. The Pleiades are known as Oxuxowibia (the hen and chickens), and the same name is given to the sword of Orion.

The Hyades from their form are known as Agogo (bell) or Egogoeva (two bells). The evening star or any bright star near the moon is known as Agukisemogie (the star that tries to take the kingship from the moon). Jupiter is known as Ogun (the blacksmith).

In the wet season a constellation called Igole is visible, but I never identified it. It was said to be the slave of Ago. The name for a meteor seems to be Osun.

For a comet Osisun (*i.e.*, hairy Osun) was suggested, but the word may refer either to a meteor which leaves a train or to a comet. Another name is Ojioko (smoky Osun).

There is a story told of a man named Ogagu, one of whose daughters married Overami. When Overami went to Uselu as Edaiki (heir apparent) he was troubled by Ogagu, and asked him to commit suicide. Ogagu went to Adolo and said he was giving up the world, but that Overami was to be driven out of Edo. There would be a sign in the sky. He ate, drank, and was merry, and then killed himself by hanging; a week later the star like a pipe went from east to west.

In Ijaba I got the following information about the stars. The top star of Orion's belt is a monkey that picks corn in the farm. The second one is a dog following the monkey, and a third is the owner of the dog.

The Pleiades are known by the same name as in Edo, and they know Alakosemogye. When they look at Jupiter they snap the second finger and thumb together; Jupiter is known as Agbede (the blacksmith).

At Sabongida they say that Agolo had a father-in-law who asked him to work on his farm; Agolo got his arm crooked with hard work. They took three dogs hunting, and the belt represents them.

A meteor is called Isogbe. When it falls and goes from east to west it means that a child will be born; when it goes from west to east that someone will die. A meteor shower is called *afihukuielimi* (smoke of heaven).

At Uzia Orion is called Owebialamo (the hunter of an animal). The four big stars are his house posts. The three stars of the belt are the hunter, his dog, and the game. One star is known as Agolan. The evening star is Auuhihemegiere. The Oxuxowibia are also known.

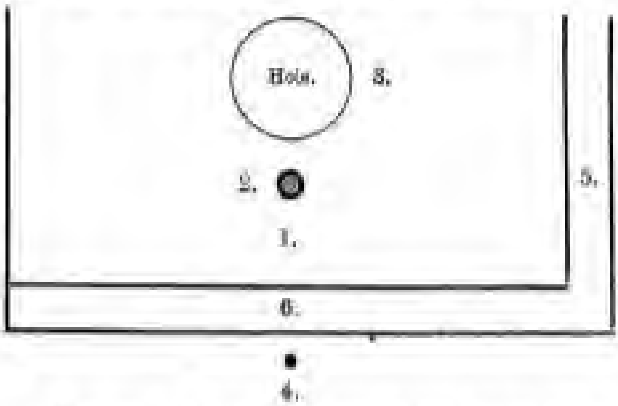
At Ekbe Orion is called Ogolan. The four bright stars are his hands and feet; the sword is his body, and the three stars of the belt are the hunter, his dog, and the game. Orion, the Pleiades, Jupiter, and the evening star seem to be the only heavenly bodies besides the sun and moon which are universally known among the Edo-speaking peoples. Among the Kukuruku of Ida they call the Milky Way the "division between the wet and dry seasons."

(*b*) Sun and Moon.

At the right-hand side of the Ikpoba road in Edo, just above the rest-house, was a shrine said to have been established by King Esigo, at which the Iwaki officiated. Esigo is said to have established the street at the time when Uti and Aven brought the sun and moon from England. One of the shrines was called

Alusvan, the shrine of lightning, and in this were a quantity of large stone implements.

The various shrines were arranged as follows :—



1. Aluesige.
2. Sun and moon.
3. Hole dug by Esige.
4. Iruse.
5. Aluti ; alusvan.
6. Aludaloxumu.

Number 2 is a heap of mud at the shrine of the sun and moon. Here, too, were Olsa and Olokun, who had to settle any quarrel between the sun and moon. Number 4 is Iruse, a pillar put underground by Esige so that all the king's sayings and doings come true.

There are said to be 201 Edo hurs, but this number was given as a perfectly general expression to signify a great number. On the wall just in front of the shrine of Esige was the shrine of thunder, Aludaloxumu. Sometimes the sun and moon came together and then there was work for Iwuki. Whether this refers to an eclipse or not I was unable to discover. At any rate, I was told that Esige chained Olsa and Olokun here so that the sun and moon might settle their quarrels. The explanation of the whole movements of the sun was as follows :—

The sun falls into the sea, but early in the morning goes up into the west just when the cocks crow, passes like a flash, makes a noise *sririrsr*. . . . No one knows what it is. The same is the explanation of the motions of the moon ; the moon is eaten up after it is full.

Behind the various shrines mentioned already is a pond said to have been dug by Esige, and when the moon gave a sign, the Iwuki went into the pond room, knelt before the shrine, and put chalk down for the moon, and cam wood and chalk for the sun.

This information was given me by the head of the Iwuki, who had not visited the city of Edo from the time that he left it in 1897. He informed me that his knowledge might not be divulged to strangers, and he took the utmost precautions to prevent any of the younger Iwuki from following him when we were going from the rest house through the palisade to the shrines described. He was in a state of intense excitement at seeing the scene of his former labours, and tears of emotion stood in his eyes.

In 1910 the site was a good deal overgrown and there were no stone implements on the surface of the ground, but there were fragments of metal either just below the surface or projecting above.

The hole said to have been dug by Esige was still in existence, and a portion of the wall.

In Edo when the people see the new moon they take sand and throw it up and say, "*Genazue ; nuyozwe owo nogbedi ; ogaluki nomo, semiue ; gumeha bauki-*" *womame ; waluki nogbona itenue* (here is soap ; take it and wash your son Ogbedi,

" if you are a good moon, bless me; let me reckon you as a good moon for my " good luck; if you are a bad moon, I run away)."

When they see a halo round the moon they say the moon has killed an elephant. When the moon looks dull they say, "*Ehi lal ogiami* (the moon has entered the " playground of his enemies)."

At Ijeba they take up chalk for the new moon and say, "I give it to you, " do well for me," and doctors put a chalk line on their arms.

At Otun they say, "Moon now I see you, let me be well and my son too; I " see you go, let me get money."

At Sabongida they say that the moon is a cunning man, who does not want to see himself all at once, so he hides his face with a cloth and draws it back bit by bit.

At Yaju they say, "Moon son of Ogene,* the first moon did not kill me, don't " you kill me."

(*c*) Rainbow.

The rainbow is a great snake—Ikpiame (water or rain snake). It grows up in the bush; when it is grown it measures itself against a palm tree; if the palm tree is bigger the snake does not leave the bush. As soon as it is big enough it goes to the sea, and when rain is going to fall it rises and sucks water from the sky, and drinks it, so that there is not so much rain. The back of the snake is like a leaf when it is in the mud on the bank of the river.

At Okpe I was told they did not know what the rainbow was and ran away when they saw it, because it would bite them (but this was denied by another informant). The rainbow is said to give people swelled legs.

At Sabongida they say that the rainbow puts one foot in the sea and another in the Niger, and is called Agadiye. One day a boy took a calabash to the Niger and saw Agadiye. He ran away, but Agadiye called him back and said, "What " do you want," and the boy said, "Water." Then he asked questions of the boy and said, "How do you drink water?" and the boy said, "I don't drink with a cup, " I don't drink with a calabash, nor with a basket"; and Agadiye said, "How, then?" The boy said, "We take a calabash for water but drink from a basket." Agadiye took a basket to drink water and told the boy to drink; the water ran out and the boy said he had drunk the water and showed him the inside of the basket; this he did because Agadiye is said to give people a calabash full to drink and kill them if they fail.

At Sogbenu they say that the rainbow lives in the sky when it does not come out. At Ugo the children say to one another, "Come and look at the rainbow."

At Gwato they say that the rainbow throws up a stone called *ogumai*, which is red like oam wood. It is found in the bush, and the bush is all red like a lamp; it makes a man rich and he can sell it for much money. There are two kinds, one of which is *Exeaie*, used to keep away thieves and to curse people with.

(*d*) Thunder.

They say in Benin that thunder is caused by Shango. In 1908 thunder fell in Ogbe, in Ebalobon's house; priests of Ishango were called to pour oil on the spot, but they could not find the stone. The prophet said that thunder fell because something had been done which Shango forbade.

Thunder is a like a dog which likes palm oil and a stone (*ogwra*) comes down with it; if oil is put down on the spot, the stone can be found. If a man

* Ogene is the same as Oza; the name Ogene is identical with that used in the Ibibo country for the supreme god.

who is not the son of a priestess finds a stone without pouring oil on it, this is a sign that he will be burned up with lightning. They cook *afo* to worship Shango, and eat it with *agidi* and plantains dried in the sun. A new stone is kept in the calabash with the blood of offering: when they take it to the shrine of Shango they say, "Here new and old Isango meet."

Thunder does not fall where the son or daughter of a priest or priestess lives. When the sky opens they begin to sing Shango's song: "Look at us, you sons, "at the place where we are, we expect no danger." This prevents the wind from blowing trees on the sons of Shango.

At Otua they say that lightning is fire, and where it falls a stone comes out of its body. Lightning is like a dog or a cock, and they meet it in the road sometimes. At Sabongida they put out fire and lights during a storm. If they take an axe from its handle and put it under the eaves lightning will not fall. At Jagbe they cover their faces and say, "Osa, do not let this kill me."

At Ikpe, in the Uzaitui country, they leave a house if lightning strikes it. They use lightning stones to make medicine on which oaths are taken. A perjurer will be struck by lightning.

At Ugo they say there are two kinds of thunder stones, *Ugoro*, which are long like *auwisi*, and *isavan*, which are big.

(*e*) Whirlwind.

Eziza is said in Benin City to be a great doctor. He comes in the whirlwind and steals people and keeps them in his house with a gate. Eziza says, "I will "kill a lot of meat," and then he tells his prisoner to watch it. Then he turns into a fly and settles on the meat and watches the man to see if he steals. If the man does not steal for three years Eziza washes the man's head with medicine and shows him many things and lets him go; if he steals Eziza kills and eats him. He stretches his hand out to a hunter's face sometimes, and the hunter cannot find his way home.

N. W. THOMAS.

Antique Sculpture. **Reid Moir.**

A Piece of Carved Chalk from Suffolk. *By J. Reid Moir.* **93**

In the issue of Man (1919, 2) for last February I published an account of a piece of chalk of peculiar form found at Great Glemham, Suffolk, by Mr. Gathorne-Hardy. The description which then appeared was the result of a careful examination of this specimen, and dealt solely with its archæological significance. In *Nature* of March 13th last Dr. C. W. Andrews, F.R.S., who has not seen the actual specimen under discussion, published a letter in which he stated that the Great Glemham relic is "nothing more than a somewhat imperfect natural "cast of a chamber of the shell of an ammonite."

Dr. Andrews has been good enough to show me the four specimens of chalk "pigs" in his possession, and there cannot, I think, be much doubt that, *in its original form*, the piece of chalk from Great Glemham was the internal cast of a chamber of the shell of an ammonite. But having said this, I wish to make it quite clear that Dr. Andrews' specimens do not bear any real resemblance to an elephant of any kind, nor to the Great Glemham specimen which bears, in its outline, a very marked resemblance to this animal. For this reason, and for others given below, I differ from Dr. Andrews' view of the piece of chalk described by me. But it is only fair to point out that on the occasion of my recent visit to South Kensington, he stated that he was concerned solely with the geological aspect of

the question, and disclaimed any desire to express an opinion from an archæological standpoint. This, however, is a different position from that which he took up in his letter to *Nature*, which appeared to imply clearly that he then regarded Mr. Gathorne-Hardy's specimen, from all standpoints, as of entirely natural origin. It is now my purpose to draw further attention to the archæological aspects of this question.

In the first place, it seems clear that the specimen under discussion has suffered an appreciable amount of modification of form* during its post-cast history. The chalk itself shows plainly three surfaces of different ages, and these surfaces I would designate A, B and C. The first, A, is represented by a roughened area and is, apparently, the most ancient surface of the specimen, while the second, B, which is an area exhibiting marked striations, may be regarded with some amount of certainty as having been produced by glacial action of some sort or kind. Thus far the interpretation of these differing surfaces does not present many difficulties but when the third variety, C, is regarded it is needful to proceed to a careful and detailed examination. This particular kind of surface is to be observed upon a large portion of the Great Glemham specimen, and presents a peculiarly smooth and "characterless" appearance. There would seem to be little doubt that this surface of the specimen is partly the result of long exposure to the solvent action of vegetable or other acids, and in the experiments carried out I have used dilute vinegar and water as the best means of producing quickly a condition similar to that brought into existence by the slow processes of natural solvents.

Samples of chalk from (1) the side of a chalk pit where the surface has been exposed to weathering for a number of years, (2) the side of a chalk pit where water charged with sand and grit has been running over it for at least five years, and (3) a piece of anciently-broken chalk from the boulder clay, do not, either before or after treatment with vinegar and water, exhibit the quality of surface shown by the area C. The reason for this seems on examination to be that in each one of these cases the surface is what may be termed "flocky"—(the freshly-exposed surfaces of broken chalk show very clearly the type of uneven surface to which I refer)—and the irregularities exhibited by such specimens persist in a greater or lesser degree after immersion in vinegar and water for some days. I found, however, that when I produced, by scraping with a sharp-edged flint, a more or less smooth surface of chalk, and then subjected it to vinegar and water, I obtained a surface very similar to C.

This artificially-produced surface shows, nevertheless, little trace of the human fashioning to which I know it was subjected. This is shown even more clearly in another piece of chalk, of which the entire surface was shaped by me with a small sharp-edged flint—immersed in vinegar and water, and subjected, finally, to a slight rubbing with my fingers. In this case, though the specimen still bears, in its profile a resemblance to that of the head of some animal, and exhibits a well-marked "ear" and "eye," the signs of the scraping and cutting have almost entirely disappeared.

It is interesting to find that some of the cuts produced by the sharp-edged flint after subjection to the action of vinegar and water, suffer partial obliteration, and appear as isolated and superficial "cracks" exhibiting a somewhat sinuous outline. This is due, I believe, to the solvent effect of the acid causing some of the chalk particles to, as it were, "flow" into the cuts and partly fill them up. What I regard as a partially-obliterated cut can be seen at the back of the "head" of the Great Glemham specimen, and is illustrated in Plate B., Fig. 2, of my original note in MAN (1919, 2). It is, of course, only the deeper cuts which show up in this way, the least deep having become entirely obliterated, while those of

* As this is the case, the specimen and its surfaces can only be justly compared with others which have been modified in a more or less similar manner.

medium depth can, by careful searching, still be traced upon the surfaces of my experimental specimens. Such lines as I mention can, I think, be recognised upon certain portions of the surface of the Great Glemham specimen, and I regard this as a fact of considerable significance. The resemblance of the "eye" in my eroded experimental specimens to the same feature exhibited by the Great Glemham relic is also very marked.

The above considerations lead me to conclude that Mr. Gathorne-Hardy's specimen has been partly fashioned by man, and this opinion apparently finds support when a comparison is made of certain characteristics of this relic, and some of the drawings and illustrations of the mammoth which have been published. Taking first the left, lateral surface (the illustrations of the parts to which I now refer will be found in MAN (1919, 2), Plate B, Figs. 1 to 4), it is seen that the striated area ends somewhat abruptly at its left-hand side, and the surface which continues to the left does so at a lower level. The junction of these two surfaces is thus marked by an "escarpment" which simulates the shoulder of a beast. Further, the cut which is to be seen at the side of the head, though placed rather far back for an elephant's eye, nevertheless gives a realistic representation of this organ. The shape of the top of the mammoth's head is portrayed more or less successfully in the Great Glemham specimen, though, as is known, this portion of the animal was dome-shaped rather than square. But a drawing in the cavern of Pindal,* and another at Castillo,† shows this creature as possessed of a head-form very similar in appearance to that exhibited by Mr. Gathorne-Hardy's specimen.

When the right lateral surface is examined it is seen that another "eye" almost on a level with, and better placed than that upon the left lateral side, is observable, together with an "ear" which, like the mammoth's, is small. The "trunk" and the "fore-foot" in this illustration are also very elephant-like in appearance. Regarding the ventral surface, it is seen to be extensively coated with some deposit which precludes an accurate examination, but there are several points about it which lead me to entertain the view that it has been slightly modified by human agency. The dorsal surface appears to have also been extensively modified, especially the area at the back of the "head," to which I have already drawn attention. As is well known, the main object of these ancient people was to produce a more or less accurate profile in most of their carvings and drawings, and in this respect the Great Glemham specimen compares favourably with many such representations. And it is certainly as elephant-like in appearance as, for example, the piece of carved ivory found at *Predmost*,‡ which, while no doubt meant to represent a mammoth, is by no means an accurate portrait of that animal. I am aware that there are certain portions of the Great Glemham specimen which one would think would have been removed by man if he had wished to shape it into the likeness of an elephant. But it is as well to remember that a similar criticism might be levelled at the well-known carving of a horse in the tavern of *Font de Gaume*,§ and the bas-relief of a woman at Laussel,‖ while the clay statuette of the female bison of *Tuc d'Audoubert* exhibits a peculiar and unnatural hollow in its right side.¶

It is thus my present opinion that the Great Glemham specimen represents one of those objects which, having a rough natural resemblance to an animal, was fashioned by ancient man to make this resemblance more striking. Those who disagree with this opinion must bring forward specimens really comparable with the piece of chalk described by me, and be able to demonstrate that the nature of their

* Parkyn, E. A.: *Prehistoric Art*, Fig. 142. † *Ibid.*, Fig. 134. ‡ *Ibid.*, Fig. 49.
§ *Ibid.*, Plate 4. ‖ *Ibid.*, Plate 5. ¶ *Ibid.*, Plate 7.

forms, surfaces, and provenance are such as to make the conclusion that these specimens are of natural origin inevitable.

The object of my original note in MAN was to give a careful description of the piece of chalk found by Mr. Gathorne-Hardy, and to discuss its archæological significance. I have now written these additional notes with a view to the further elucidation of this problem. If Dr. Andrews is able to bring forward facts demonstrating my conclusions to be wrong, I shall at once acknowledge this to be the case.

J. REID MOIR.

Central America: Linguistics. Breton.

Relationships in Central America. *By A. C. Breton.* 94

In compliance with a request for further information respecting the terms of relationship formerly used in Central America* and Mexico, the following are submitted, with some notes.

The Mexican list is only partial, for Molina does not give one, and to look through the whole of his long vocabulary, proved too great a task. The Mexican language is quite distinct from those of Guatemala.

The only note available at this moment on the Maya (or *langua Yucateca*, as it is called in all the early works on the subject), is the following, from P. Perez' dictionary—

Father, as called by the son - - - - - -	Tat.
Woman's adult son - - - - - - -	Xib.
First cousins, sons of father's sisters - - - -	Mam.
Grandfather on mother's side - - - - -	Mam.†

A grandfather says *mam* to his daughter's son.

The interchange of terms between grandparents and grandchildren seems similar to that introduced among Spaniards about 1680, and mentioned by the author of the Pokomchi vocabulary, when husbands and wives began calling each other *hija, hija* (son, daughter). At the present day, among Spanish-speaking Mexicans, an adult daughter sometimes addresses her mother as *hija*.

Xiquin = ear, hearing, was suitably applied to great-grandchildren (in Pokomchi and Kekchi) and to great-great-grandchildren (in Quiche), when the old folks may have been deaf; then the terms were interchanged, as with *mam*.

Xikat = comb, said by a woman to her adult brother or cousin (Quiche, Cakchiquel, Pokomchi), is a curious expression. Perhaps the long, thick hair was combed after washing and drying, by the idle member of the family, the woman being busy with babies and their other duties.

Atit = old woman or grandmother, signifies in Pokomchi also the moon or month. In the latter sense it was used to reckon the age of an infant until a year old. *Hanab ratit?* = How many old women has it? *Hinah ratit, quijb ratit* = one month, two. The ordinary word for the moon was *po*. The moon was considered to have great influence on women.

The position of women among the Quiche was such that the woman was mentioned first in the Fifth Commandment, in the questions of the marriage services,

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* MAN, 1917, 116, the Kekchi list: In this list, instead of "First cousin of my father," etc., read "My first cousin on father's side (mother's side)."

† According to A. Recinos, mam or mem means stammering, stuttering, and it was used by the Cakchiquel for neighbouring peoples who could not speak their language fluently. Applied to very old or young persons it may mean, unable to speak plain.

and in the list here given. The use of the term mother to aunts and other elder relatives may have been only to increase the feeling of respect and reverence for them. The eldest sister of a large family did mother the rest. Families kept together and became a kind of clan, so that marriage was not thought of even by persons of no blood relationship. A daughter's marriage was expressed by: I take a son-in-law = *qui hianic*. A son's marriage by: I take a daughter-in-law = *quin alibic*.

With regard to the pronunciation of the special jerked, guttural sounds in these languages, it is doubtful if extra letters are of much use. They have to be learnt orally. The *c* of *cahol* is usually written with a sort of *g*, but this is not the same sound that is rendered by the double *c*, and the *k* and *qu* are also made distinct by the early writers, although *Kiche* and *Kekchi* are sometimes written with *qu*. A peculiar *h* comes usually at the end of a word, or, in the Pokomchi vocabulary, at the end of a line.

O. Stoll seems to have been the first to say what is obvious—that these languages of Guatemala are not mere dialects, but distinct as Spanish, French, and Italian. The temporary ascendancy of the Quiche nation at the time of the Spanish conquest made them prominent, like the Aztecs, but to the more cultivated Pokoman they were barbarians.

"*Quiche chi*, the idiom and speech of the Quiche of Zacapula. *Quiche ahk* = wild pig. Quiche [*che* = woods] means all that grows or lives in the woods, wild, not cultivated nor domestic. The men of that nation of the Quiche are called *Quiche vinak*, or *Ah quiche chi*, those of that tongue, and all tribes of wild folk who live in the tropic forest are called *Quiche vinak*. To say to anyone that he is a rough countryman, uncultured, not courtly = *quichelah vinak* or *chicoplah* [beast-like] *vinak* = savage, brutal" (*Pokomchi vocabulary*).

Brasseur de Bourbourg concluded that Quiche "had succeeded to Pokoman "(Pokomchi) almost wherever it is spoken." It seems to have adopted much from the latter, but, judging from the vocabularies, Pokomchi was far more highly developed, and, though Quiche was *une langue élégante et d'une grande richesse*, that may have been due to the importations. Most of the elementary words differ between the two languages.

Some Terms of Consanguinity in the Mexican Language, from the Vocabulary by A. de Molina, 1571.

Father - - - - - - -	Tlatli
Mother - - - - - - -	Nantli, tenantzin
Father's or mother's brother - - - -	Tlatli
Father's or mother's sister - - - -	Auitl
Grandfather's or grandmother's brother - -	Colli, tecol
Grandmother's sister - - - - -	Citli
Great-grandfather's brother - - - -	Achtontli
Great-grandfather's sister, great-grandmother - -	Piptontli
Great-great-grandfather's brother - - -	Mintontli
Thy son, in general - - - - -	Tepiltzin, (or) tetel puch
Thy daughter - - - - - -	Teich puch
Thy eldest son or daughter - - - -	T'yacapan, (or) yacapantli
Thy second son or daughter - - - -	Tlacoyeua, (or) tetlamamalo
Third, fourth, or fifth son or daughter - -	Tlacotoyeu
Youngest or last son or daughter - - -	Xocoyotl
Sons, daughters, and grandchildren - - -	Tepilhuan
Grandson, granddaughter - - -	Yxuiuhtli, (or) teixuiuh

Great-grandson, great-granddaughter	Yentontli, (or) teienton
Great-great-grandson (or) daughter	Mintontli, (or) teminton
Thy elder brother	Teachcauh
Thy younger brother	Telecauh
Thy elder sister	Teuetiah, (or) teciuapo
Thy younger sister	Teicu
Son or daughter of a man's brother or sister	Machtli
My first (or chief) wife	Pillo

Women say *no conenh* = my son or daughter, and *no pilo* = my nephew or niece. Six-fingered, *mapil chiquacen*.

Some Terms from the Fragmentary Pokonchi Manuscript Vocabulary (about 1690).

Son	Acun
Father	Ahua
Mother	Tut
(Reverential term = mother, lady, *ru*).	
My (man's) sister, cousin, or near female relative	Vanah (general term, *anabhee*).
My (man's) elder brother and male cousin	Vuz
General term for elder brother	Axbez, aixbez
Verb, *axih*, *axeh*, to take as an elder brother. Also *axih*, to give birth (obsolete expression).	
My younger brother	Nu chaç
Grandfather	Mama
Grandmother	Atit, aquen
My great-grandmother	Nu xiquin atit
My great-grandfather	Nu xiquin mani
Salute to elder men, and used by a wife in addressing her husband.	Aui
My (woman's) adult brother or cousin	Nu zibal
My (woman's) grandchild	Vi
My (woman's) great-grandchild	Nu xiquin i
Elder relative by affinity of a married couple (uncles of husband or wife).	V'atlib
Niece's husband	V'hi
Equals in affinity to the wife, or younger, call each other	V'balaç
My ancestors	Vabau nu mamtaque
Tribe, connections	Molab
Reverential, used to maidens—daughters of caciques	Que
The corn-grinder, term of respect	Ah que

In Tactic the elder women say *yoix* = son, when saluting young men or youths. This is an affectionate "epithet like *vi* in the other Pokomchi towns."

Table of Consanguinity and Affinity in Cakchiquel, from a Manuscript Vocabulary by Villacañas.

	Man says.	Both.	Woman says.
My father		Nu tata	
„ mother		Nu te	
„ son	Nu cabol		Val
„ daughter	Nu mial		Vixoeal

	Man says.	Both.	Woman says.
My elder brother	Nu nimal		Nu xibal
,, younger brother	Nu chaʒ		Nu xibal
,, elder sister	Vana		Nu nimal
,, younger sister	Vana		Nu nimal
,, wife	Vixhail		
,, husband			Vachahiil
,, father-in-law	Nu hinam		Valixam
,, mother-in-law	Nu hito		Valito
,, son-in-law		Nu hi	
,, daughter-in-law		Va ji	
,, brother-in-law	Nu halue		Vu
,, sister-in-law	Vix nam		Vali
,, stepfather		Nu yahtata	
,, stepmother		Nu yahto	
,, son by a former marriage	Nu yah cahui		Nu yahui
,, daughter by a former marriage	Nu yah mial		Nu yahyxcoal
,, uncle on father's side		Nu tata	
,, aunt on father's side		Nu to	
,, uncle on mother's side		Vinan	
,, aunt on mother's side		Vinan	
,, male cousin, elder or younger	Nu nimal		Nu xibal
,, female cousin, elder			Nu nimal
,, female cousin, younger	Nu cha		
,, grandfather		Nu mama	
,, grandmother		Vatit	
,, grandson	Nu man		Vi
,, granddaughter	Nu man		Vi

Tables of Consanguinity and Affinity in Quiche, or Kiche.*

For Men and Women.

My mother - Nu chu, (or) chuch
,, father - Nu kahav
,, mother of my father or mother - Vatit
,, father of my father or mother - Nu mam
,, mother of my grandmother - Uchuch vatit
,, mother of my grandfather - Vatit, uchuch nu mam
,, father of my grandfather - Nu mam, rahau rech nu mam
,, great-great-grandmother - Nu xiquin vatit
,, great-great-grandfather - Nu xiquin mam

Man's Speech.

My uncle, father's brother - Valav
Father's elder brother - Rata a kahav
Father's younger brother - Chaʒ a kahav
My father's elder sister - Vcab nu chu, rauab nu kahav
My mother's elder sister - Vcab nu chu, ratzic nu chu

* From a manuscript Kiche vocabulary of 216 leaves, made by the early Franciscan fathers and recopied in 1787 by F. J. Tirado for Father J. J. Henriquez, priest of Sto Domingo, Zacapula. Two pages of the woman's terms are blank. Lent by Mr. C. P. Bowditch.

My mother's younger sister	Vchaꞌ nu chu
My mother's brother	Vigan
Sister of father or mother	Chuch
My aunt (mother), sister of my grandfather	Nu chu, ranab nu mam
My aunt, elder sister of my grandmother	Nu chu, ratxic vatit, (thy) ratz nuatit
My aunt, younger sister of my grandmother	Nu chu, vchaꞌ vatit, (thy) vchaꞌ nuatit
Grandmother's brother (literally, my father, brother of my grandmother).	Nu kahav uxihal vatit
Grandfather's brother	Nu kahav ratxic (elder), vchaꞌ mam
Thy grandfather's elder brother	Ratz a mam
Thy grandfather's younger brother	Chaꞌ a mam
Sister of my grandfather	Nu chu, ranab nu mam
My son	Nu cahol
,, only son	Xaki hun nu cahol
,, first-born son	Nu nahoy cahol, (or) habe u cahol achi
,, last-born son	Nu zon alab
,, daughter	Nu miel, (or) meal
,, only daughter	Xaki hun nu miel
,, eldest daughter	Nu nahoy miel
,, last-born daughter	Nu zon alit
,, grandson	Nu mam alab
,, granddaughter	Nu mam alit. (The same for great-grandson and great-granddaughter, (or) *nu xiquin mam.*)
,, great-great-grandson	Nu xiquin mam alab
,, great-great-granddaughter	Nu xiquin mam alit
,, elder brother	Vatxic, (or) atz ixel
,, younger brother	Nu chaꞌ
,, elder sister	Vanab atz ixel
,, younger sister	Vanab chaꞌ ixel
,, nephew, son of brother or sister	Vicaꞌ alab
,, (also) nephew, son of male or female	Vicaꞌ alab
,, cousin, (and) son of nephew or niece	Vicaꞌ alab
,, niece, daughter, as above	Vicaꞌ alit
,, cousin, son of uncle or aunt	Vixic vachalel alab
,, cousin, daughter of uncle or aunt	Vixic vachalel alit

Grades of Affinity, Man's Speech.

My stepfather	Nu kahavihal
,, stepmother	Nu chachihal
Father of my wife	Nu hi achi
Mother	Nu hi yxok
My wife	Uixokji
,, wife's son by former marriage	Nu caholahal
,, wife's daughter by former marriage	Nu mialahal
,, wife's brother, my sister's husband	Nu balne
,, daughter's husband, my son's wife	Vixnam
Father of my son-in-law or daughter-in-law	Vachalib achi
Mother	Vachalib yxok
Husband of my sister-in-law	Vach hi
Wife of my brother-in-law	Vix nam

Woman's Speech.

My son	Val
„ son if unmarried	Val alab
„ son if married or a widower	Val achi
„ only son	Xaki hun val
„ first born	Nu nabey al
„ last born (add particles as above)	Val zon
„ daughter	Val
„ daughter if unmarried	Val alit
„ daughter if married or widow	Val yxok
„ daughter if child-bearing	Valon
„ only daughter	Xaki hun val
„ first born	Nu nabey al
„ last born (with particles as above)	Val zon
„ grandson	Viy
„ grandson unmarried	Viy alab
„ grandson married or widower	Viy achi
„ granddaughter	Viy
„ granddaughter unmarried	Viy alit
„ granddaughter married or widow	Viy yxok

Great-grandson and great-granddaughter, the same.

Third degree, *Nu aiguin viy*, adding the distinctive particles.

My brother	Nu xibal
Brother-in-law	Echam

The elder sister calls her younger sister *nu che*; and the younger says *cutz* to the elder.

Stepson and stepdaughter	Valabal

RELATIONSHIPS IN SZINCA.

The following terms are from a manuscript vocabulary and grammar of 1770 recently found in the city of Guatemala, and bought by Mr. C. P. Bowditch, who has presented a photostat copy to the library of the Peabody Museum at Harvard. This is the first work known on the language of the Szinca, who are supposed to have been supplanted in Guatemala by later immigrations. According to Mr. M. H. Saville, there are still about 5,000 of them along the Pacific Coast for fifty miles, on the southern border towards Salvador, and about the same distance inland. The priest-author gives a good grammar with full conjugations of verbs. The vocabulary consists mainly of verbs and nouns, with no numerals. There are Szinca names of several towns, as: Txoge for Chiquimula. The pronunciation has difficulties, and the author invented some special letters. He describes the *ll* as somewhat like the Spanish, but with an *h* and thick, "as if the mouth were full of saliva." The *ue* diphthong should be "two parts *u* and one part *e*." These two sounds are unlike any used in the neighbouring languages. The *j* is pronounced hard as the Spanish, or as *h* in English.

The father	tata (*tata ag*, his father; *tatacalli*, plural)
The mother	Utáa (*utac*, our mother)
Grandfather	anñi
Grandmother	aguà (*aguaca ay*, your grandmother)
Uncle	papáa
Aunt	anñ
Brother (elder)	azuyá (first)
„ (younger)	ecuerué

Sister (younger) - - - - -	guaejué
The wife (mature woman) - - -	ne axaya
The husband (mature man) - - -	ne axaua
Son - - - - - - -	náu (*naun*, my son)
Son (adult) - - - - - -	jamu, náu
Daughter - - - - - -	iaya náu (*iaya*, female)
Grandson, granddaughter - - -	llapá (*llapa aglic*, his grandchildren)
Mother-in-law - - - - -	naatly
Son-in-law - - - - - -	llaecagua
Daughter-in-law - - - - -	payi
Brother or sister-in-law - - - -	pandeá
Son or daughter by a former marriage -	lluecivi nau

The Choti vocabulary of 1695 has only a few terms. These are:—

Father - - -	mi	Elder uncle of his father (tio mayor de su padre) -	nomi (great father)
Mother - - -	na	Elder aunt of her mother (tia mayor de su madre) -	nu na (great mother)
Son or daughter - -	chuc		
Elder brother - -	sacun		
Younger brother - -	ytzin	Stepfather (second father -	tech mi
Sister - - -	ytan	Stepmother (second mother)	tech na
Grandfather - - -	mam	Father-in-law - -	alib (or) nial
Grandmother - -	mim (or) chich	Mother-in-law - -	inial
Grandchildren - -	mam, mim	Son-in-law - - -	nial
Husband - - -	ichlam	Brother-in-law - -	ochacus
Uncle - - -	ithan	Sister-in-law - - -	mu
		Adopted son - - -	cupal (or) intanal.

A. C. BRETON.

REVIEW.

Africa: Linguistics. **Werner.**

Introductory Sketch of the Bantu Languages. By Alice Werner. viii + 346 pp. London: Kegan Paul, Trench, Trübner & Co., Ltd. New York: E. P. Dutton & Co. 1919. **95**

Miss Werner has followed up her former work on *The Language-Families of Africa* (see MAN, 1917, **11**) by a very useful little book introducing the student to a general description of the principles underlying the structure of the Bantu family. Details which are applicable only to particular languages are avoided, unless they happen to throw light upon processes of thought from which the grammar has evolved.

The introductory chapter gives an account of the early history of Bantu studies and a description of the main features which distinguish the Bantu from other African language families. (The "semi-Bantu," or "Bantoid," do not come within the scope of Miss Werner's book.) This chapter also contains notes on stress, intonation, and orthography.

The grammar is dealt with in eleven chapters; the examples being taken chiefly from Zulu, Chwana, Herero, Nyanja, Swahili, Ganda, Gisu, and Kongo. These sufficiently indicate the diversity in Bantu speech as well as its essential unity. Two final chapters discuss word-building and phonetic laws. As an appendix Miss Werner gives some native texts in Zulu, Herero, Ila, Nyanja, Swahili (two dialects), and Ganda, with interlinear and free translations and copious notes. A second appendix contains a very useful bibliography, and there is a good index. The student working through this book will find it a valuable preliminary to the detailed study, for administrative or missionary purposes, of any particular language of east, south, or south-west Africa. SIDNEY H. RAY.

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